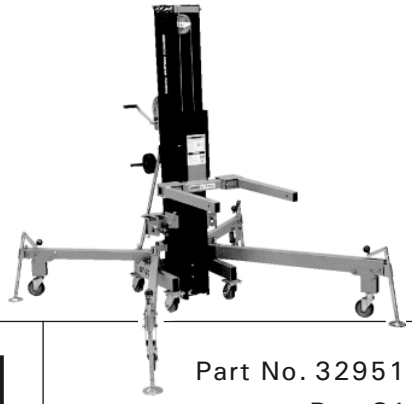
Genie®



Parts & Service Manual

Part No. 32951
Rev C1
January 2006

Super Tower™

(from serial number 7794-00101 to 7799-00101)

Important

Read, understand and obey the safety rules and operating instructions in the appropriate Operator's Manual on your machine before attempting any maintenance procedure.

Basic mechanical, hydraulic and electrical skills are required to perform most procedures. However, several procedures require specialized skills, tools, lifting equipment and a suitable workshop. In these instances, we strongly recommend that maintenance and repair be performed at an authorized Genie dealer service center.

Technical Publications

Genie Industries has endeavored to deliver the highest degree of accuracy possible. However, continuous improvement of our products is a Genie policy. Therefore, product specifications are subject to change without notice.

Readers are encouraged to notify Genie of errors and send in suggestions for improvement. All communications will be carefully considered for future printings of this and all other manuals.

Contact Us:

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First Edition, Third Printing

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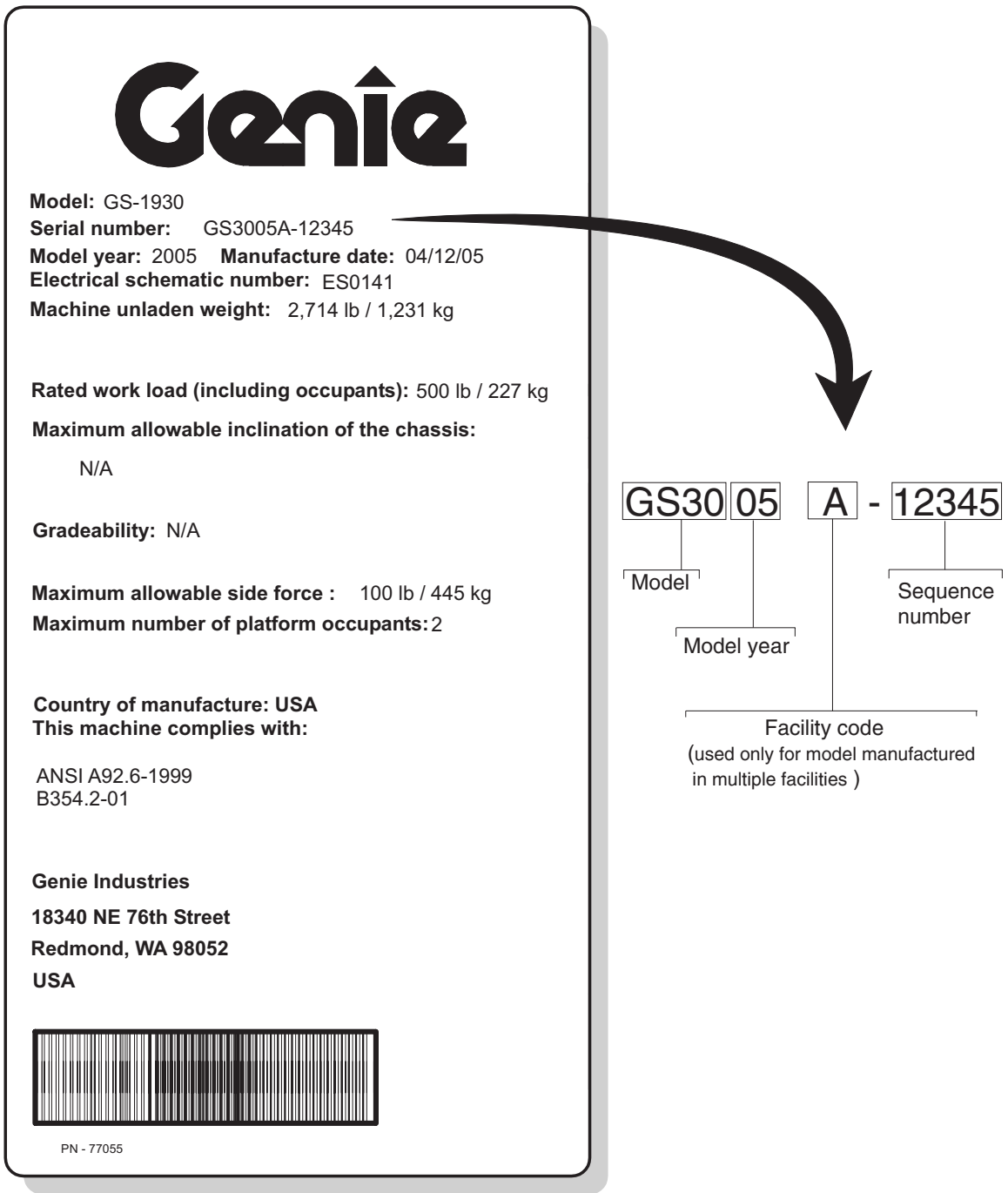
How To Read Your Serial Number



Safety Rules

Warning

Failure to obey the instructions and safety rules in this manual and the *Genie Super Tower Operator's Manual* could result in death or serious injury.

Many of the hazards identified in the operating instruction manual are also safety hazards when maintenance and repair procedures are performed.

Do Not Perform Maintenance Unless:

- ☑ You are trained and qualified to perform maintenance on this machine.
- ☑ You read, understand and obey:
  - manufacturer's instructions and safety rules
  - employer's safety rules and worksite regulations
  - applicable governmental regulations
- ☑ You have the appropriate tools, lifting equipment and a suitable workshop.

Personal Safety

Any person working on or around a machine must be aware of all known safety hazards. Personal safety and the continued safe operation of the machine should be your top priority.

Read each procedure thoroughly. This manual and the decals on the machine, use signal words to identify the following:

Safety alert symbol—used to alert personnel to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠DANGER Red—used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING Orange—used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION Yellow with safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

CAUTION Yellow without safety alert symbol—used to indicate the presense of a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE Green—used to indicate operation or maintenance information.

Be sure to wear protective eye wear and other protective clothing if the situation warrants it.

Be aware of potential crushing hazards such as moving parts, free swinging or unsecured components when lifting or placing loads. Always wear approved steel-toed shoes.

Workplace Safety

Be sure to keep sparks, flames and lighted tobacco away from flammable and combustible materials like battery gases and engine fuels. Always have an approved fire extinguisher within easy reach.

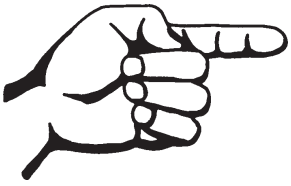
Be sure that all tools and working areas are properly maintained and ready for use. Keep work surfaces clean and free of debris that could get into machine components and cause damage.

Be sure that your workshop or work area is properly ventilated and well lit.

Be sure any forklift, overhead crane or other lifting or supporting device is fully capable of supporting and stabilizing the weight to be lifted. Use only chains or straps that are in good condition and of ample capacity.

Be sure that fasteners intended for one time use (i.e., cotter pins and self-locking nuts) are not reused. These components may fail if they are used a second time.

Be sure to properly dispose of old oil or other fluids. Use an approved container. Please be environmentally safe .



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Parts Stocking List

Required Parts

The following parts are required to perform maintenance procedures as outlined in the *Genie Super Tower Parts and Service Manual.*

Description	Part No.
White Lithium Grease	91670
Cable Replacement Coupler	12402
Disc Brake (One-speed Winch)	7571
Disc Brake (Two-speed Winch)	37061

Manuals

Genie Industries offers the following support documents for these models:

Title	Part No.
Genie Super Tower Operator's Manual (before serial number 7794-101)	32950
EMI Safety Manual	27581

Recommended Parts

Description	Part No.
Genie Gray Paint, 12 Ounce / 355 ml Aerosol	1268
Genie Blue Paint, 12 Ounce / 355 ml Aerosol	1484
Genie Blue Paint, 1 Gallon / 3.78 liters	32150
Genie Gray Paint, 1 Gallon / 3.78 liters	32151
Pinion Plate (One-speed Winch)	7591
Pinion Plate (Two-speed Winch)	40122
Ratchet Gear (One-speed Winch)	6777
Ratchet Gear (Two-speed Winch)	40121
Pinion Gear (One-speed Winch)	7590
Pinion Gear (Two-speed Winch)	80157
Pinion Shaft (One-speed Winch)	32891
Ratchet Pawl Kit (One-speed Winch)	40458
Ratchet Pawl Kit (Two-speed Winch)	40117
Cable Keeper Kit (One-speed Winch)	6190
Cable Keeper Kit (Two-speed Winch)	40130
Primary Shaft Assembly	72264
Pin Assembly with Lanyard	32940
Roller Bolt, $^1/_2$ -13 x 1.84 inches	32475
Nylatron Roller, 1.75 x 0.72 inch	32473
Safety Brake Assembly	35101
Loctite Thread Lock	65764

How To Order Parts

Please be prepared with the following information when ordering replacement parts for your Genie product:

- ☑ Machine model number
- ☑ Machine serial number
- ☑ Genie part number
- ☑ Part description and quantity
- ☑ Purchase order number
- ☑ "Ship to" address
- ☑ Desired method of shipment
- ☑ Name and telephone number of the authorized Genie Distributor in your area

Use the Service Parts Fax Order Form on the next page and fax your order to our Parts Department.

If you don't know the name of your authorized distributor, or if your area is not currently serviced by an authorized distributor, please call Genie Industries.

Machine Information

Model

Serial Number

Date of Purchase

Authorized Genie Distributor

Phone Number

Genie North America
Telephone (425) 556-6551
Toll Free (877) 367-5606 in U.S.A. and Canada
Fax (425) 556-8659

Genie UK
Parts Telephone (44) (0) 1476 584352
Parts Fax (44) (0) 1476 584340

Genie Australia
Parts Telephone (617) 03375 1660
Parts Fax (617) 03375 1002

Genie France
Parts Telephone (33) (0) 237 26 09 99
Parts Fax (33) (0) 237 31 50 10

Genie Germany
Parts Telephone (49) (0) 4202 885223
Parts Fax (49) (0) 4202 885225

Genie Scandinavia
Parts Telephone (46) (31) 3409612
Parts Fax (46) (31) 3409613

Genie Iberica
Parts Telephone (34) (93) 5795042

Genie Brazil
Parts Telephone (55) (114) 1665755
Parts Fax (55) (114) 1665754

Genie Japan
Parts Telephone (81) (33) 4536082
Parts Fax (81) (33) 4536083

Genie China
Parts Telephone (86) (215) 3852570
Parts Fax (86) (215) 3852569

Genie
A TEREX COMPANY

Service Parts Fax Order Form

Fax to: (425) 556-8659 or Toll Free: 888-274-6192
International: +1-425-556-8659

Please fill out completely

Date _____ Account Number _____

Your Name _____ Your Fax Number _____

_____ Your Phone Number _____

Bill To _____ Ship To _____

_____ _____

_____ _____

_____ _____

Purchase Order Number _____ Ship Via _____

Model(s) _____ **Serial No.(s)** _____

Optional Equipment _____

Part Number	Description	Quantity	Price

All back-ordered parts will be shipped when available via the same ship method as the original order unless Noted below:

- ☐ Ship complete order only - No back orders
- ☐ Ship all available parts and contact customer on disposition of back-ordered parts
- ☐ Other (please specify)

FOR GENIE INDUSTRIES USE ONLY

Order Number _____ Origin Code _____ Comments _____

Date Scheduled _____ Ship Condition _____ _____

Order Total _____ Terms Code _____ _____

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remove this page and make copies

REV A

Specifications

Model	ST-20	ST-25
Height-Stowed	78 3/4 in 200 cm	78 3/4 in 200 cm
Width-Stowed	22 in 56 cm	22 in 56 cm
Length-Stowed	25 1/4 in 64 cm	25 1/4 in 64 cm
Length-Operating	81 3/4 in 208 cm	81 3/4 in 208 cm
Ground Clearance	2 in 50.8 mm	2 in 50.8 mm
Outrigger Footprint	81 3/4 in 208 cm	81 3/4 in 208 cm
Load Capacity at 18" load center	800 lbs 363 kg	650 lbs 295 kg
Net Weight	437 lbs 198 kg	476 lbs 216 kg

Dimensions	ST-20	ST-25
Adjustable Forks		
forks down	19 ft 6 in 6 m	24 ft 4 in 7.4 m
forks up	21 ft 2 1/2 in 6.5 m	26 ft 1/2 in 7.9 m

Load Handling Attachment	L x W x D	Net Weight
Adjustable Forks	27 1/2 x 11 1/2 to 30 x 2 1/2 in 70 x 29 to 76 x 6.5	52.5 lbs 23.8 kg

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Scheduled Maintenance Procedures

Observe and Obey:

- ☑ Maintenance procedures shall be completed by a person trained and qualified on the maintenance of this machine.
- ☑ Scheduled maintenance procedures shall be completed daily, quarterly and annually as specified on the maintenance inspection report.

⚠WARNING Failure to properly complete each inspection when required could result in death, serious injury or substantial machine damage.

- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating machine.
- ☑ Keep records on all inspections for three years.
- ☑ Be sure the capacities of sawhorses or other supports are sufficient to withstand machine weight. See Specifications section for the machine weight.
- ☑ Be sure overhead cranes or other lifting devices are of ample capacity to handle machine weight. See Specifications section for machine weight.
- ☑ Unless otherwise specified, perform each procedure with the machine in the following configuration:
  - Machine positioned on a firm, level surface
  - Carriage fully lowered
  - Casters locked
  - Load handling attachment installed

About This Section

This section contains detailed procedures for each scheduled maintenance inspection.

Each procedure includes a description, safety warnings and step-by-step instructions.

Symbols Legend

Safety alert symbol—used to alert personnel to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠DANGER Red—used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING Orange—used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION Yellow with safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

CAUTION Yellow without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE Green—used to indicate operation or maintenance information.

⊙ Indicates that a specific result is expected after performing a series of steps.

SCHEDULED MAINTENANCE PROCEDURES

Maintenance Symbols Legend

NOTICE The following symbols have been used in this manual to help communicate the intent of the instructions. When one or more of the symbols appear at the beginning of a maintenance procedure, it conveys the meaning below.

Indicates that tools will be required to perform this procedure.

Indicates that new parts will be required to perform this procedure.

Indicates that dealer service will be required to perform this procedure.

Pre-delivery Preparation Report

The pre-delivery preparation report contains checklists for each type of scheduled inspection.

Make copies of the *Pre-delivery Preparation Report* to use for each inspection. Store completed forms as required.

Maintenance Schedule

There are three types of maintenance inspections that must be performed according to a schedule—daily, quarterly and annual. The *Scheduled Maintenance Procedures Section* and the *Maintenance Inspection Report* have been divided into three subsections—A, B and C. Use the following chart to determine which group(s) of procedures are required to perform a scheduled inspection.

Inspection	Checklist
Daily or every 8 hours	A
Quarterly or every 250 hours	A + B
Annual or every 1000 hours	A + B + C

Maintenance Inspection Report

The maintenance inspection report contains checklists for each type of scheduled inspection.

Make copies of the *Maintenance Inspection Report* to use for each inspection. Store completed forms for three years.

Pre-Delivery Preparation

Fundamentals

It is the responsibility of the dealer to perform the Pre-delivery Preparation.

The Pre-delivery Preparation is performed prior to each delivery. The inspection is designed to discover if anything is apparently wrong with a machine before it is put into service.

A damaged or modified machine must never be used. If damage or any variation from factory delivered condition is discovered, the machine must be tagged and removed from service.

Repairs to the machine may only be made by a qualified service technician, according to the manufacturer's specifications.

Scheduled maintenance inspections shall be performed by qualified service technicians, according to the manufacturer's specifications and the requirements listed in the responsibilities manual.

Instructions

Use the operator's manual on your machine.

The Pre-delivery Preparation consists of completing the Pre-operation Inspection, the Maintenance items and the Function Tests.

Use this form to record the results. Place a check in the appropriate box after each part is completed. Follow the instructions in the operator's manual.

If any inspection receives an N, remove the machine from service, repair and re-inspect it. After repair, place a check in the R box.

Legend

Y = yes, completed
N = no, unable to complete
R = repaired

Comments

Pre-Delivery Preparation	Y	N	R
Pre-operation inspection completed			
Maintenance items completed			
Function tests completed			

Model

Serial number

Date

Machine owner

Inspected by (print)

Inspector signature

Inspector title

Inspector company

Genie Industries USA
18340 NE 76th Street
PO Box 97030
Redmond, WA 98073-9730
(425) 881-1800

Genie UK
The Maltings, Wharf Road
Grantham, Lincolnshire
NG31- 6BH England
(44) 1476-584333

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Maintenance Inspection Report

Model

Serial number

Date

Machine owner

Inspected by (print)

Inspector signature

Inspector title

Inspector company

Instructions

· Make copies of this report to use for each inspection.

· Select the appropriate checklist(s) for the type of inspection to be performed.

☐	**Daily or 8 hour Inspection:**	**A**
☐	**Quarterly or 250 hour Inspection:**	**A+B**
☐	**Annual or 1000 hour Inspection:**	**A+B+C**

· Place a check in the appropriate box after each inspection procedure is completed.

· Use the step-by-step procedures in this section to learn how to perform these inspections.

· If any inspection receives an “N”, tag and remove the machine from service, repair and re-inspect it. After repair, place a check in the “R” box.

Legend

Y = yes, acceptable

N = no, remove from service

R = repaired

Comments

Checklist A - Rev B		**Y**	**N**	**R**
A-1	Pre-Operation Inspection			
A-2	Function Tests			

Checklist B - Rev B		**Y**	**N**	**R**
B-1	Inspect All Welds			
B-2	Clean the Columns			
B-3	Winch operation			
B-4	Inspect / Lubricate winch			

Checklist C - Rev B		**Y**	**N**	**R**
C-1	Casters and wheels			
C-2	Inspect the Mast Assembly for Wear			
C-3	Friction Disks			
C-4	Brake System			
C-5	Inspect the painted surfaces			

Checklist A Procedures

REV B

A-1
Perform Pre-operation Inspection

Completing a Pre-operation Inspection is essential to safe machine operation. The Pre-operation Inspection is a visual inspection performed by the operator prior to each work shift. The inspection is designed to discover if anything is apparently wrong with a machine before the operator performs the function tests. The Pre-operation Inspection also serves to determine if routine maintenance procedures are required.

Complete information to perform this procedure is available in the appropriate operator's manual. Refer to the Operator's Manual on your machine.

A-2
Perform Function Tests

Completing the function tests is essential to safe machine operation. Function tests are designed to discover any malfunctions before the machine is put into service. A malfunctioning machine must never be used. If malfunctions are discovered, the machine must be tagged and removed from service.

Complete information to perform this procedure is available in the appropriate operator's manual. Refer to the Operator's Manual on your machine.

Checklist B Procedures

REV B

B-1
Inspect All Welds

Weld inspections are essential to safe machine operation and good machine performance. Failure to locate and repair damage may result in an unsafe operating condition.

1 Visually inspect the welds in the following locations:

- Winch mounting plate
- Loading wheels/steer handle
- Base
- Legs and stabilizers
- Load handling attachment(s)

B-2
Clean the Columns

Clean columns are essential to good machine performance and safe operation. Extremely dirty conditions may require that the columns be cleaned more often.

1 Raise all columns to full height.

2 Visually inspect the inner and outer channels of the columns for debris or foreign material. If necessary, use a mild cleaning solvent to clean the columns.

⚠WARNING Bodily injury hazard. This procedure will require the use of additional access equipment. Do not place ladders or scaffold on or against any part of the machine. Performing this procedure without the proper skills and tools could result in death or serious injury. Dealer service is strongly recommended.

CHECKLIST B PROCEDURES REV B

B-3
Check the Winch Operation

Detection of damage to the winch is essential to safe machine operation. An unsafe working condition exists if the winch is damaged or not operating correctly. A daily check of the winch operation allows the inspector to identify changes in the operating condition of the winch that might indicate damage.

1 Visually inspect all the winch components for damage.

2 Raise the carriage through a partial cycle and release the winch handles.

⊙ Result: The winch should operate smoothly, free of hesitation or binding. The load should not lower when the handles are released.

3 Fully lower the carriage.

⊙ Result: The winch should operate smoothly, free of hesitation or binding.

B-4
Inspect and Lubricate the Winch

Maintaining the winch is essential to good machine performance and safe operation. An unsafe working condition exists if the winch has excessive wear and/or does not operate smoothly, free of hesitation and binding.

1 Carefully lubricate the following areas with automotive grease:

- Cable drum gear
- Teeth on the pinion gear that mesh with the cable drum gear
- Threads on the pinion shaft, under the pinion gear
- **Models with Two-speed winch:** The teeth on the slow and the fast speed gears where they mesh together

NOTICE Do not apply grease to brake friction disks or rachet gear.

2 Carefully lubricate both pivot points on each ratchet pawl with 30W oil.

REV B CHECKLIST B PROCEDURES

3 Measure each friction disk for wear. Replace the friction disk if it measures less than specification.

Friction disk specification	
Thickness, minimum	1/16 inch 1.6 mm

4 Measure both shaft bushings for wear. Replace the bushings if the wall thickness measurements are less than specification.

Pinion shaft bushing specification	
Wall thickness, minimum	1/8 inch 3.1 mm

5 Lubricate the surface of the frame drum spacer with a thin layer of lithium grease. Tighten the drum bolt to 20 ft-lbs / 27 Nm. Do not overtighten.

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Checklist C Procedures

REV B

C-1
Lubricate the Casters and Wheels

Regular application of lubrication to the Caster or Wheel is essential to good machine performance and service life. Extremely dirty conditions may require that the casters and wheels be inspected and libricated more often.

1 Visually inspect each caster and wheel for cuts, cracks or unusual wear.

2 Move the machine on a flat smooth surface and check that the casters and wheels roll smoothly, free of hesitation and binding.

3 Pump grease into the caster or wheel until it can been seen coming out of the bearing gap.

Grease Type	Lithium-based

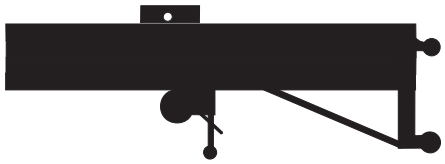
C-2
Inspect the Mast Assembly for Wear

Detection of excessive or unusual wear in the mast assembly is essential for safe machine operation. An unsafe working condition exists if the mast assembly has excessive wear and/or does not operate smoothly, free of hesitation and binding.

1 Attach an overhead crane or similar lifting device to the lifting bracket on the mast.

2 Lift the machine slightly and then guide it over onto the ground, so that the machine is laying on the loading wheels.

⚠WARNING Crushing hazard. The machine will fall unless it is properly supported with the overhead crane.



3 Visually inspect the top of each column for clearance between the roller wheel and the adjacent column surface.

⊙ Result: There should be a maximum gap of 0.062 inch / 1.57 mm between the roller wheel and the column.

NOTICE If mast inspection results in a measurement that is not within specification, refer to Repair procedure 2-1, *How to Disassemble the Mast Assembly.*

4 Visually inspect the bottom of each column for clearance between the roller wheel and the adjacent column surface.

⊙ Result: There should be a maximum gap of 0.062 inches / 1.57 mm between the roller wheel and the column.

NOTICE If mast inspection results in a measurement that is not within specification, refer to Repair Procedure 2-1, *How to Disassemble the Mast Assembly.*

C-3
Replace the Winch Friction Disks

Maintaining the winch is essential to good machine performance and safe operation. An unsafe working condition exists if the winch has excessive wear and/or does not operate smoothly, free of hesitation and binding.

1 Replace the winch friction disks. Refer to Repair Procedures 3-1, *How to Disassemble the One-speed Winch* and 3-2,*How to Disassemble the Two-speed Winch.*

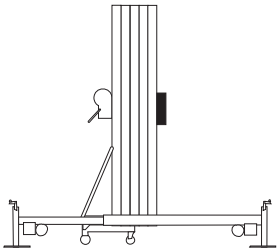
C-4
Inspect the Safety Brake System

Detection of damage or a defect to the safety brake system is essential for safe machine operation. An unsafe working condition exists if the system is damaged or defective and does not allow the mast to sequence properly, free of hesitation and binding.

⚠WARNING This procedure requires specific repair skills and a suitable workshop. Attempting this procedure without these skills may result in death or serious injury or significant component damage. Dealer service is strongly recommended.

⚠CAUTION Bodily Injury Hazard. Metal edges can be sharp. Be sure to wear protective gloves to perform this procedure.

1 Install a load handling attachment into the carriage (use forks or the boom if possible). Do not place any weight on the load handling attachment.



2 Raise the carriage until it is half way up the front column.

3 Physically hold the bottom side of the carriage and lift it approximately 5 inches / 12.7 cm, then drop it.

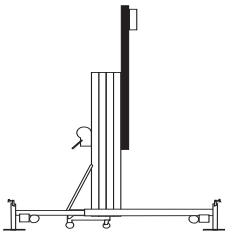
⊙ Result: The carriage should stop within 3 inches / 7.6 cm and the safety brake should lock.

⚠CAUTION Crushing hazard. Do not stand directly under columns.

4 Raise the carriage 6 inches / 15.2 cm to unlock the safety brake.

5 Continue raising the carriage until the front column is half way up the adjacent column.

6 Physically hold the bottom side of the front column, and lift it approximately 5 inches / 12.7 cm, then drop it.



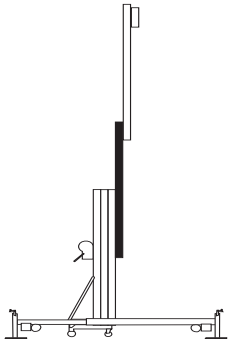
⚠CAUTION Crushing hazard. Do not stand directly under columns.

7 Raise the front column 6 inches /15.2 cm to unlock the safety brake.

8 Continue raising the carriage until the front column is fully raised and the next column is half way up the adjacent column.

9 Physically hold the bottom side of the next column, and lift it approximately 5 inches / 12.7 cm, then drop it.

⚠CAUTION Crushing hazard. Do not stand directly under columns.



10 Repeat steps 7 through 9 to test all remaining columns.

NOTICE When unlocking the safety brake, it may be necessary to hold down the column behind the brake to be unlocked.

NOTICE The number one column (column attached to the base) does not have a safety brake and will not need to be tested.

CHECKLIST C PROCEDURES REV B

C-5
Inspect the Painted Surfaces

Inspecting the painted surfaces of your machine is essential to safe operation. An unsafe working condition exists if there is damage to painted surfaces that is not corrected.

1 Visually inspect the welds in the following locations:

- Blistering
- Rust
- Peeling
- Fading
- Corrosion

NOTICE Replace any component if it is damaged.

Troubleshooting Flow Charts

Observe and Obey:

- ☑ Troubleshooting and repair procedures shall be completed by a person trained and qualified on the repair of this machine.
- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating the machine.
- ☑ Be sure the capacities of sawhorses or other supports are sufficient to withstand machine weight. Refer to Specifications section for specific weight.
- ☑ Be sure overhead cranes or other lifting devices are of ample capacity to handle machine weight. See Specification section for specific weight.

Before Troubleshooting:

- ☑ Read, understand and obey the safety rules and operating instructions printed in the *Genie Super Tower Operator's Manual*.
- ☑ Be sure that all necessary tools and test equipment are available and ready for use.
- ☑ Read each appropriate flow chart thoroughly. Attempting shortcuts may produce hazardous conditions.
- ☑ Be aware of the following hazards and follow generally accepted safe workshop practices.

⚠DANGER Crushing hazard. When testing or replacing the primary component, always support the structure and secure it from movement.

NOTICE Perform all troubleshooting on a firm, level surface.

NOTICE Two people will be required to safely perform some troubleshooting procedures.

About This Section

When a malfunction is discovered, the flow charts in this section will help a service professional pinpoint the cause of the problem. To use this section, basic hand tools are required.

General Repair Process

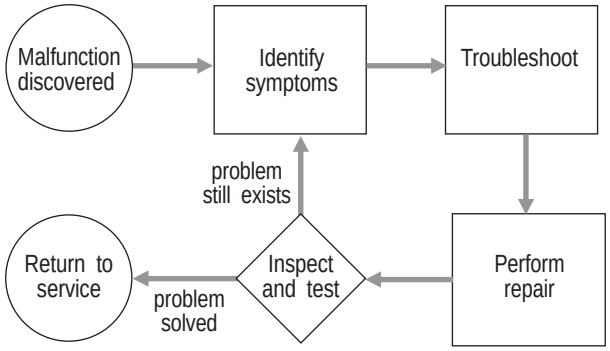


Chart 1

REV B

Mast Will Not Sequence Properly

Be sure safety brake (if equipped) is not engaged by fully raising and lowering all columns.

Improper sequencing of the mast columns may occur when the machine is at or near maximum capacity. If improper sequencing occurs, the columns may shift to their correct position during operation or when the load is removed. The forks will not change position if the columns shift position. The carriage should always raise first, and lower last.

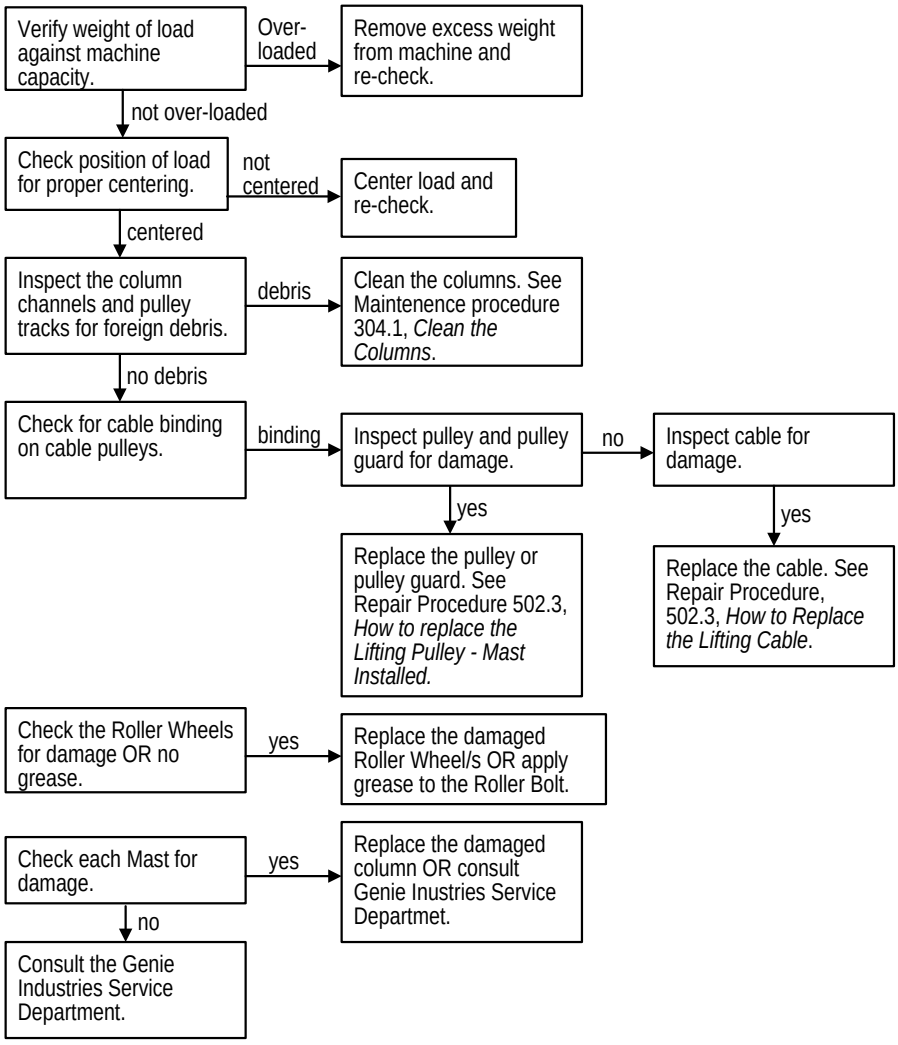

Verify weight of load against machine capacity.
Over-loaded
Remove excess weight from machine and re-check.
not over-loaded
Check position of load for proper centering.
not centered
Center load and re-check.
centered
Inspect the column channels and pulley tracks for foreign debris.
debris
Clean the columns. See Maintenence procedure 304.1, Clean the Columns.
no debris
Check for cable binding on cable pulleys.
binding
Inspect pulley and pulley guard for damage.
no
Inspect cable for damage.
yes
Replace the pulley or pulley guard. See Repair Procedure 502.3, How to replace the Lifting Pulley - Mast Installed.
yes
Replace the cable. See Repair Procedure, 502.3, How to Replace the Lifting Cable.
Check the Roller Wheels for damage OR no grease.
yes
Replace the damaged Roller Wheel/s OR apply grease to the Roller Bolt.
Check each Mast for damage.
yes
Replace the damaged column OR consult Genie Inustries Service Departmet.
no
Consult the Genie Industries Service Department.

Chart 2

REV B

Carriage Will Not Raise, But Winch Will Operate

Be sure the carriage hold-down bar is not engaged.

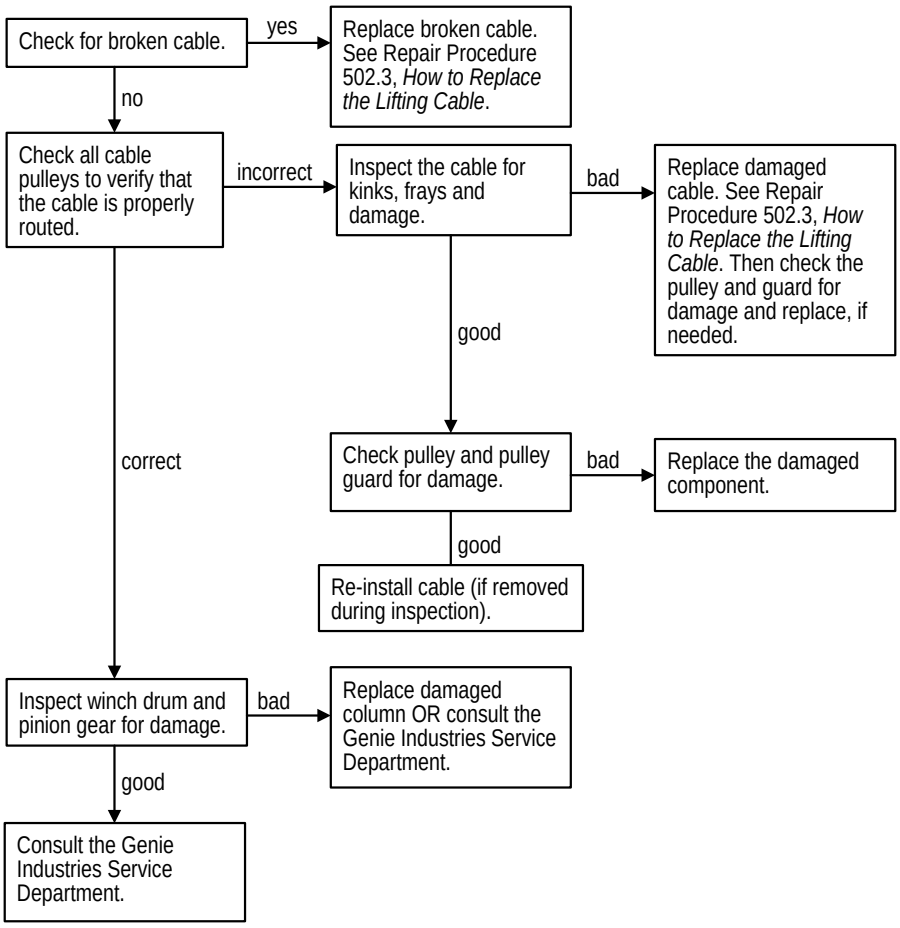
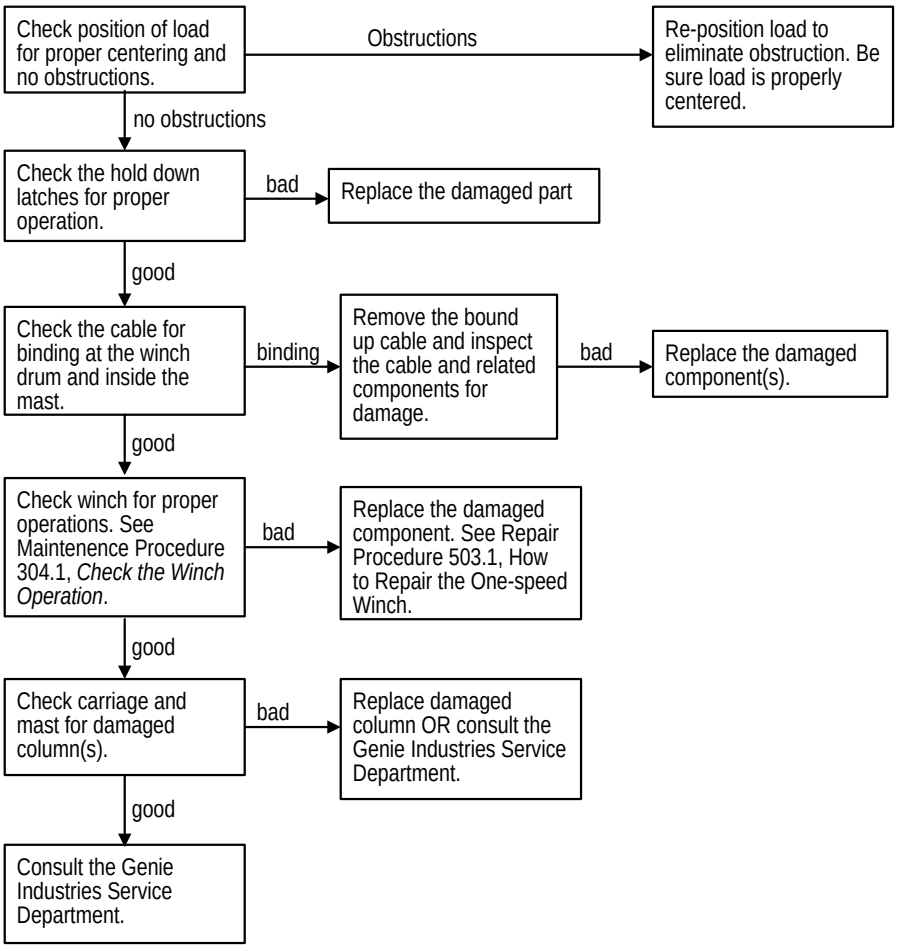

Check for broken cable.
yes
Replace broken cable. See Repair Procedure 502.3, *How to Replace the Lifting Cable*.
no
Check all cable pulleys to verify that the cable is properly routed.
incorrect
Inspect the cable for kinks, frays and damage.
bad
Replace damaged cable. See Repair Procedure 502.3, *How to Replace the Lifting Cable*. Then check the pulley and guard for damage and replace, if needed.
good
correct
Check pulley and pulley guard for damage.
bad
Replace the damaged component.
good
Re-install cable (if removed during inspection).
Inspect winch drum and pinion gear for damage.
bad
Replace damaged column OR consult the Genie Industries Service Department.
good
Consult the Genie Industries Service Department.

Chart 3

REV B

Winch Will Not Operate


Check position of load for proper centering and no obstructions.
Obstructions
Re-position load to eliminate obstruction. Be sure load is properly centered.
no obstructions
Check the hold down latches for proper operation.
bad
Replace the damaged part
good
Check the cable for binding at the winch drum and inside the mast.
binding
Remove the bound up cable and inspect the cable and related components for damage.
bad
Replace the damaged component(s).
good
Check winch for proper operations. See Maintenence Procedure 304.1, Check the Winch Operation.
bad
Replace the damaged component. See Repair Procedure 503.1, How to Repair the One-speed Winch.
good
Check carriage and mast for damaged column(s).
bad
Replace damaged column OR consult the Genie Industries Service Department.
good
Consult the Genie Industries Service Department.

Repair Procedures

Observe and Obey:

- ☑ Repair procedures shall be completed by a person trained and qualified on the repair of this machine.
- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating the machine.

Before Repairs Start:

- ☑ Read, understand and obey the safety rules and operating instructions in the *Genie Super Tower Operator's Manual*.
- ☑ Be sure that all necessary tools and parts are available and ready for use.
- ☑ Be sure the capacities of sawhorses or other supports are sufficient to withstand machine weight. See Specifications section for specific weight.
- ☑ Be sure overhead cranes or other lifting devices are of ample capacity to handle machine weight. See Specifications section for specific weight.
- ☑ Read each procedure completely and adhere to the instructions. Attempting shortcuts may produce hazardous conditions.
- ☑ Unless otherwise specified, perform each procedure with the machine in the following configuration:
  - · machine positioned on a flat level surface
  - · carriage fully lowered
  - · casters locked

About This Section

Most of the procedures in this section should only be performed by a trained service professional in a suitably equipped workshop. Select the appropriate repair procedure after troubleshooting the problem.

Perform disassembly procedures to the point where repairs can be completed. To re-assemble, perform the disassembly steps in reverse order.

Symbols Legend

Safety alert symbol—used to alert personnel to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠DANGER Red—used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING Orange—used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION Yellow with safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

CAUTION Yellow without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE Green—used to indicate operation or maintenance information.

⊙ Indicates that a specific result is expected after performing a series of steps.

Base Assembly

REV B

1-1
How to Remove the Base

1 Fully lower the carriage.

2 Remove the load handling attachment from the machine.

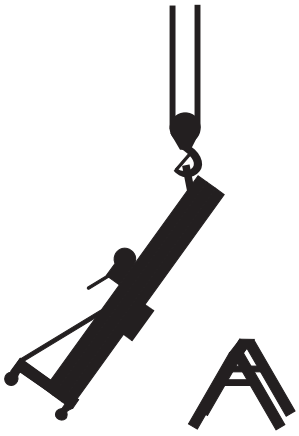
3 Remove the outriggers from the outrigger storage sockets.

4 Attach a lifting strap from an overhead crane to the lifting bracket on the number 1 mast.

5 Place a sawhorse on the carriage side of the mast.

6 Lift the machine slightly and then, while lowering it, guide the machine over onto the sawhorse.

⚠CAUTION Crushing hazard. The machine will fall unless it is properly supported with the overhead crane.



7 Secure the top of the mast to the sawhorse.

8 Attach a lifting strap from an overhead crane to the base and lift the machine enough to slide a second sawhorse under the mast, next to the base.

⚠CAUTION Crushing hazard. The machine will fall unless it is properly supported with the overhead crane.

9 Remove the mounting fasteners from the mast brace to the base. Repeat for other side.

10 Remove the base mounting fasteners. Then remove the base from the machine.

Mast Assembly

REV B

2-1
How to Disassemble the Mast Assembly

1 Remove the cable retaining fasteners from the winch drum. Then remove all of the cable from the drum.

2 Tip the machine backwards and rest the top of the number one mast on an appropriate support. The mast assembly should be level with the Carriage up.

⚠CAUTION Bodily injury hazard. Use proper lifting techniques.

3 Remove the mounting fastener from the cable anchor on the last column (carriage side).

4 Remove the cable from the mast by pulling on the cable anchor end of the cable.

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling cable.

5 Slide the carriage forward about 1 foot / 30 cm to expose the column stop mounting fastener attached to the bottom end of the top column, below the carriage. Remove the fastener and the stop.

6 Use a hex key wrench through the access holes in the carriage to release the safety brake. Slide the carriage away from the base 1 inch / 2.5 cm while reaching through both slots. Position the hex key above the safety brake rollers and pull back on the wrench.

7 Remove the carriage by sliding it out the bottom of the mast towards the base while holding the safety brake rollers in position with the hex key wrench.

8 Repeat steps 5 through 7 for each remaining column.

How to Release the Safety Brake When Servicing the Mast

The safety brake system will lock when the machine is tilted horizontally. When the brake is locked, the columns can extend but not retract. If the safety brake system locks while you are servicing the mast, use one of the following methods described below to release the brake;

A The first method allows you to release each column successively starting at the carriage and removing columns one by one. This is described above in How to Disassemble the Mast Assembly, steps 6 and 7.

B The second method allows you to release any column in the assembly regardless of position but requires a custom made tool. The tool is a piece of 1/8 to 3/16 inch / 3 to 4 mm diameter stiff wire bent in an L shape with one end 1 inch /25 mm long and the other end 16 inches / 41 cm long. The installation of a handle on the 16” end will make it easier to use.

Using the special tool, reach from the bottom of the column and into the safety brake access slot in the inner side wall of the column. Slide the carriage away from the base about 1 inch / 2.5 cm while reaching through the far upper end of the slot. Position the short end of the tool above the safety brake rollers and pull back on the tool. Slide the released column out the bottom of the mast assembly.

How to Assemble the Mast

1 Inspect all mast parts for wear and damage, and replace as necessary.

2 Clean all of the columns and rollers.

3 Clean all of the safety brake assemblies.

4 Position the number one column so that it is open side up and level. If it is not attached to the base, secure the column to your sawhorses or work table before proceeding.

5 Install all column assembly components (if removed during disassembly). Apply a small amount of grease between the roller bolt head and the inside of the roller wheel.

6 Slide the number two column into the number one from the bottom. Stop inserting the column when the top of the safety brake assembly is even with the bottom of the number one column.

7 Repeat with all remaining columns. All columns should be sticking out of the next lower column. Do not install the carriage.

NOTICE Cable is installed after all columns are together as an assembly.

8 Attach the swagged end of the cable to the cable anchor on the top of the front column.

9 With the other end of the cable in hand, feed it through the box section (web) of the carriage into the pulley and push it through the pulley until it comes out the back side of the carriage.

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling cable.

NOTICE Refer to Section Eight, Figure 8-D, *Mast Components, Pulleys and Cables*, to identify the cable routing.

10 Insert the carriage into the bottom end of the top column. Hold the carriage from moving and pull the cable up to the top of the column, leaving enough slack so that you can feed the cable through the next pulley.

11 Push the cable through the exposed portion of the pulley at the top of the column until the cable reaches the pulley at the bottom of the column.

12 Using needle nose pliers, insert the cable end into the cable pulley. Push the cable through the pulley until the end comes out.

13 Push the cable between the two mast sections until it comes out the top of the column.

14 Repeat steps 11 through 13, until all the columns are cabled.

15 Slide all the columns forward, until you can install the column stops. Do not slide the columns forward further than necessary.

16 Install all the components removed during disassembly.

17 Attach the cable to the winch and be sure cable is routed correctly.

18 Raise all the columns to full height to release the safety brakes and verify proper operation.

2-2
How to Replace the Lifting Cable

NOTICE All Genie replacement cables come with one preswaged end that terminates to the last column and one taped end that terminates to the winch.

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling cable.

1 Fully lower the carriage.

2 Wrap a piece of strapping tape around the cable just below the swagged end of the cable.

3 Remove the cable from the winch drum.

4 Cut the cable where you placed the tape.

NOTICE Cable must be cut using a cutting tool which will not leave frays on the end of the cable.

5 Using the cable re-threading tool that came with your cable, insert even amounts of cable into each end of the tool.

6 Pull the old cable out from the winch and pull in new cable at the same time.

NOTICE If cable gets caught as you are pulling it through the columns and pulleys, take care not to pull too hard as you can break the connection between the two cables. Try pulling the cable back and forth until the cable pulls free.

2-3
How to Replace a Lifting Pulley - Mast Installed

1 Fully lower the carriage.

2 Unwind 1 to 2 feet / 0.30 to 0.60 cm of cable from the winch drum.

3 Using proper lifting techniques, lay the machine on the floor on its back on the loading wheels.

4 If replacing an upper pulley, slide the column that is above the pulley to be replaced forward. If replacing a lower pulley, slide the column with the pulley to be replaced forward. Push the column forward about 6 inches / 15.2 cm to expose the lower column stop.

5 Remove the column stop.

6 Slide the column backwards until the pulley to be replaced is exposed.

7 Remove the two mounting fasteners from the pulley mounting block. Then remove the pulley assembly.

8 Remove the bolt that attaches the pulley to the mounting block.

NOTICE Note where the shims are located before dissembling.

MAST ASSEMBLY

Winches

9 Remove the old pulley. Install the cable onto the new pulley, then install the pulley onto the column.

⚠CAUTION When installing the cable onto the pulley, make sure the cable does not get twisted or sequencing and other mast related problems will occur.

NOTICE Make sure the cable guard is located over the retaining pin on the pulley mounting block. Make sure the pulley spins freely after reassembling the pulley assembly.

10 Attach the pulley assembly to the column.

11 Assemble the columns in reverse order of disassembly.

12 Repeat the procedure for other pulleys to be replaced.

3-1
How to Disassemble the One-speed Winch

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling cable.

1 Fully lower the carriage.

2 Remove the cable retaining fastener from the winch drum. Then remove the cable from the drum.

3 Remove the handles from the pinion shaft.

4 Remove the drum bolt and the drum bolt spacer. Then remove the drum and drum gear cover and the housing spacer from the winch.

5 Remove the two lock nuts from the pinion shaft by holding the opposite end of the shaft by the flattened portion of the threads.

CAUTION Be careful not to damage the threads while holding the pinion shaft.

6 Remove the retaining ring from the pinion shaft.

7 Slide the pinion shaft to the left and remove the pinion spacer, pinion plate, ratchet gear and friction disks. Remove the pinion gear by turning it counterclockwise, then slide it off the right side of the shaft.

8 Remove the pinion shaft from the winch housing.

9 Remove both pinion bushings. Use a soft metal drift equal to the outside diameter of the bushing and tap with rubber mallet.

CAUTION Place a block in between the walls of the winch housing to prevent the housing from bending while removing the bushings.

10 Remove the winch housing from the machine.

How to Assemble the One-speed Winch

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling cable.

NOTICE Refer to Section Eight, Figure 8-E, *One-speed Winch* for an exploded view of the winch.

1 Place one side of the winch housing over a vise. Open the vise until it is wider than the outside diameter of the bushing.

2 Insert a soft metal drift through the opposite bushing hole. Tap the drift with a rubber mallet to push the bushing into place. Repeat steps 1 and 2 to insert the other bushing.

NOTICE Use a piece of flatbar in between the drift and the bushing to prevent any damage to the bushing.

3 Add two drops of 30W oil to both pivot points on each ratchet pawl.

CAUTION Do not allow grease or oil onto the brake friction disks or the ratchet gear.

4 Install the winch housing onto the mast. Be sure the winch drum is towards the top.

5 Insert the longer threaded end of the pinion shaft through the left bushing approximately half way.

6 Apply a small amount of automotive grease to the large threaded section of the pinion shaft, under the gear nut. Install the pinion gear onto the pinion shaft with the gears towards the left wall of the winch housing. Screw onto the large threads hand tight.

7 Install a friction disk, ratchet gear, friction disk, pinion plate and pinion spacer in respective order onto the pinion shaft.

CAUTION Do not allow grease or oil onto the friction disks or the ratchet gear.

8 Push the pinion shaft to the right, through the right pinion bushing and install the pinion shaft retaining ring.

NOTICE Use your fingers to push the ratchet pawls outwards while pushing pinion shaft through the right bushing. Be sure the ratchet pawls are in firm contact with the ratchet gear and all parts move freely.

9 Install the two jam nuts to the right side of the pinion shaft one at a time and tighten.

10 Install a handle to both sides of the pinion shaft in opposite directions and secure with a lock nut on each end of the pinion shaft.

11 Lubricate the outside of the frame spacer that goes through the cable drum with automotive grease and then insert it into the drum.

12 Install the cable drum so that the drum gears mesh with the ratchet gears.

13 Install the drum bolt keeper onto the drum bolt and then insert the drum bolt through the winch housing and drum with the head of the drum bolt on the drum gear side of the winch.

14 Place the drum gear cover into position with the drum bolt slot under the drum bolt keeper.

15 Install the drum bolt jam nut hand tight.

16 Install the housing spacer with the head of the housing spacer bolt on the right side of the winch and through the slotted portion of the drum gear cover. Place the nut on the end of the bolt and tighten.

17 Tighten and torque the drum bolt nut to 20 to 25 ft. lbs / 27 to 34 Nm.

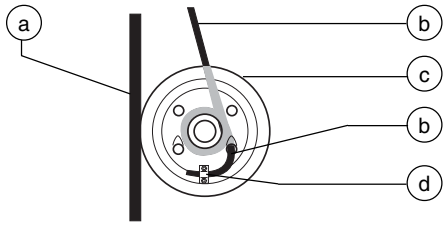
CAUTION Overtightening the drum bolt jam nut may cause damage to the frame spacer and prevent the drum from spinning freely.

18 Lubricate with automotive grease the teeth of the drum gear and the pinion nut that meshes with the drum gear.

CAUTION Do not allow grease or oil onto the friction disks or the ratchet gear.

19 Rotate the drum so that the two square cable keeper holes are at the top. Install the cable keeper clip to the outside of the drum with the two carriage bolts coming through from the inside. Install the lock washers and nut. Do not tighten down the nuts at this point.

20 Route the end of the cable around the winch drum and out through the remaining hole on the left side wall of the drum.



a number one column
b cable
c winch drum
d cable keeper clip

21 Insert the end of the cable under the cable keeper clip approximately 1/2 inch / 13 mm and tighten the cable keeper clip.

22 While holding the cable tight on the drum, rotate the drum with a handle and spool the cable onto the drum neatly.

CAUTION Component damage hazard. Be sure the cable winds onto the winch drum evenly.

3-2
How to Disassemble the Two-speed Winch

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling cable.

1 Fully lower the carriage and remove the load handling attachment.

2 Remove the cable retaining fasteners from the winch drum. Remove the cable from the drum.

3 Remove both handle retaining fasteners from the pinion shaft. Remove the handles.

4 Remove the drum bolt and spacer. Remove the drum, drum gear cover and housing spacer.

5 Remove the input shaft cover.

6 Remove the mounting fasteners from the spring and ball housing.

7 Remove the two springs and balls from the spring and ball housing.

8 Slide the input shaft out of the winch housing.

9 Remove the retaining ring from the pinion shaft.

10 Remove the lock nut from the end of the pinion shaft (located on the outside of the winch housing).

NOTICE Note the location and position of the components on the pinion shaft.

11 Slide the pinion shaft to the right and remove the pinion spacer, pinion plate, ratchet gear, and friction disks. Turn the pinion gear counterclockwise and slide it off the left side of the shaft.

12 Remove both pinion bushings. Use a soft metal drift equal to the outside diameter of the bushing and tap with a rubber mallet.

CAUTION Component damage hazard. Place a block between the walls of the winch housing to prevent the housing from bending while removing the bushings.

How to Assemble the Two-speed Winch

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling cable.

NOTICE Refer to Figure 8-F, *Two-speed Winch,* for exploded view of the winch.

1 Place one side of the winch housing over the jaws of a vise. Open the vise until the jaws are wider than the outside diameter of the bushing.

2 Insert a soft metal drift through the opposite bushing hole. Line up the tab on the bushing to the hole in the winch housing. Tap the drift with a rubber mallet to push the bushing into place.

3 Repeat steps 1 and 2 to insert the other bushing.

NOTICE Use a piece of flatbar or wood between the drift and the bushing to prevent any damage to the bushing.

4 Add two drops of 30W oil to both pivot points on each ratchet pawl.

CAUTION Component damage hazard. Do not allow grease or oil onto the friction disks or the ratchet gear.

5 Install the winch housing on the mast. Be sure the winch drum is toward the top.

6 Insert the longer threaded end of the pinion shaft approximately halfway through the right side bushing.

7 Apply a small amount of multi-purpose grease to the large threaded section of the pinion shaft, under the gear nut. Slide the pinion shaft gears onto the pinion shaft. Install the pinion gear onto the pinion shaft with the gears toward the right side of the winch housing. Screw onto large threads hand tight.

8 Install, in order, a friction disk, a ratchet gear, a friction disk, a pinion plate and a pinion spacer onto the pinion shaft.

CAUTION Component damage hazard. Do not allow grease or oil onto the brake disk, ratchet gear or the teflon spacer.

NOTICE The teeth on the ratchet gear must curve toward the left side of the winch housing.

9 Install the pinion shaft retaining ring onto the pinion shaft.

NOTICE Use your fingers to push the ratchet pawls outwards while pushing the pinion shaft through the left bushing. Be sure the ratchet pawls are in firm contact with the ratchet gear and that all parts move freely.

10 Install the lock nut on the left side of the pinion shaft.

11 Install the input shaft approximately half way through the left side of the winch housing.

12 Slide the left side bushing, spring and ball housing, spacer, input shaft gears and right side bushing onto the input shaft.

13 Install the ball and spring into the spring and ball housing. Install the mounting fasteners.

14 Lubricate the outside of the frame spacer with multi-purpose grease and insert it into the drum.

15 Install the cable drum. Be sure the drum gears mesh with the ratchet gears.

16 Install the drum bolt keeper. Push the drum bolt through the winch housing, drum cover and drum. Be sure the head of the drum bolt is on the drum gear side of the winch.

17 Install the drum bolt jam nut and torque to 20 to 25 ft-lbs / 27 to 34 Nm.

CAUTION Component damage hazard. Overtightening the drum bolt jam nut may cause damage to the frame spacer and prevent the drum from spinning freely.

18 Lubricate the teeth of the drum gear and the pinion nut with multi-purpose grease.

CAUTION Component damage hazard. Do not allow grease or oil onto the friction disks or the ratchet gear.

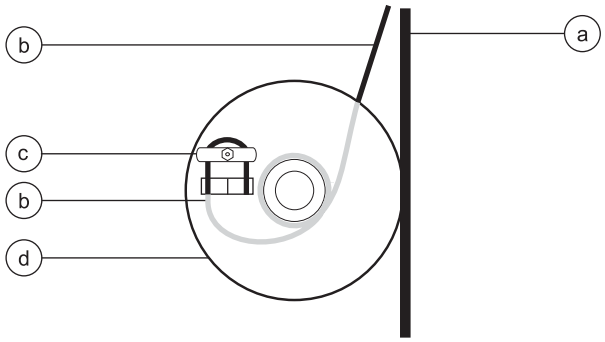
19 Install the input shaft cover.

20 Rotate the winch drum so that the oblong slot is visible and horizontal.

21 Install the cable keeper clip on the outside of the winch drum with one carriage bolt coming through from the inside. Install the lock washer and nut finger tight. Do not tighten the nut.

22 Route the end of the cable between the winch drum and the number one column. Proceed around the drum and up through the horizontal slot in the winch drum. The cable is then fed under the lefthand side of the cable clip, pulled forward, looped, and then fed under the right hand side of the cable keeper clip. The raw end of the cable is then fed into the righthand side of the horizontal slot in the winch drum.

⚠WARNING Crushing hazard. Failure to proprely route the cable may result in a winch brake failure.



a Number one column
b Cable
c Cable keeper clip
d Winch drum

23 Tighten the cable keeper fastener.

24 While holding the cable tight on the drum, rotate the drum with a handle and spool the cable onto the drum evenly.

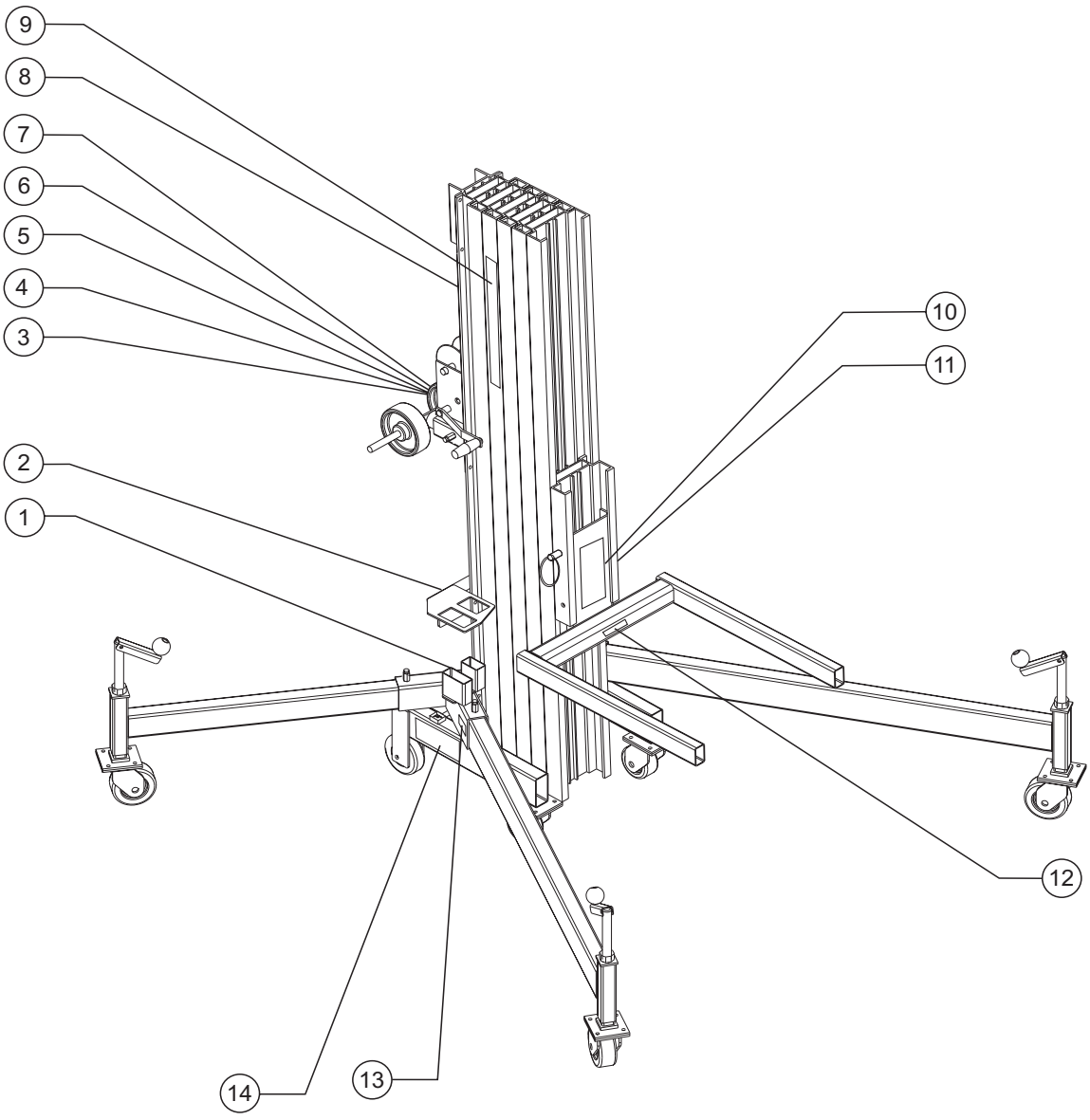
CAUTION Component damage hazard. Be sure the cable winds onto the winch drum evenly.

Decals

Figure 6-A

REV B

Decals with Words (before serial number 7794-101)



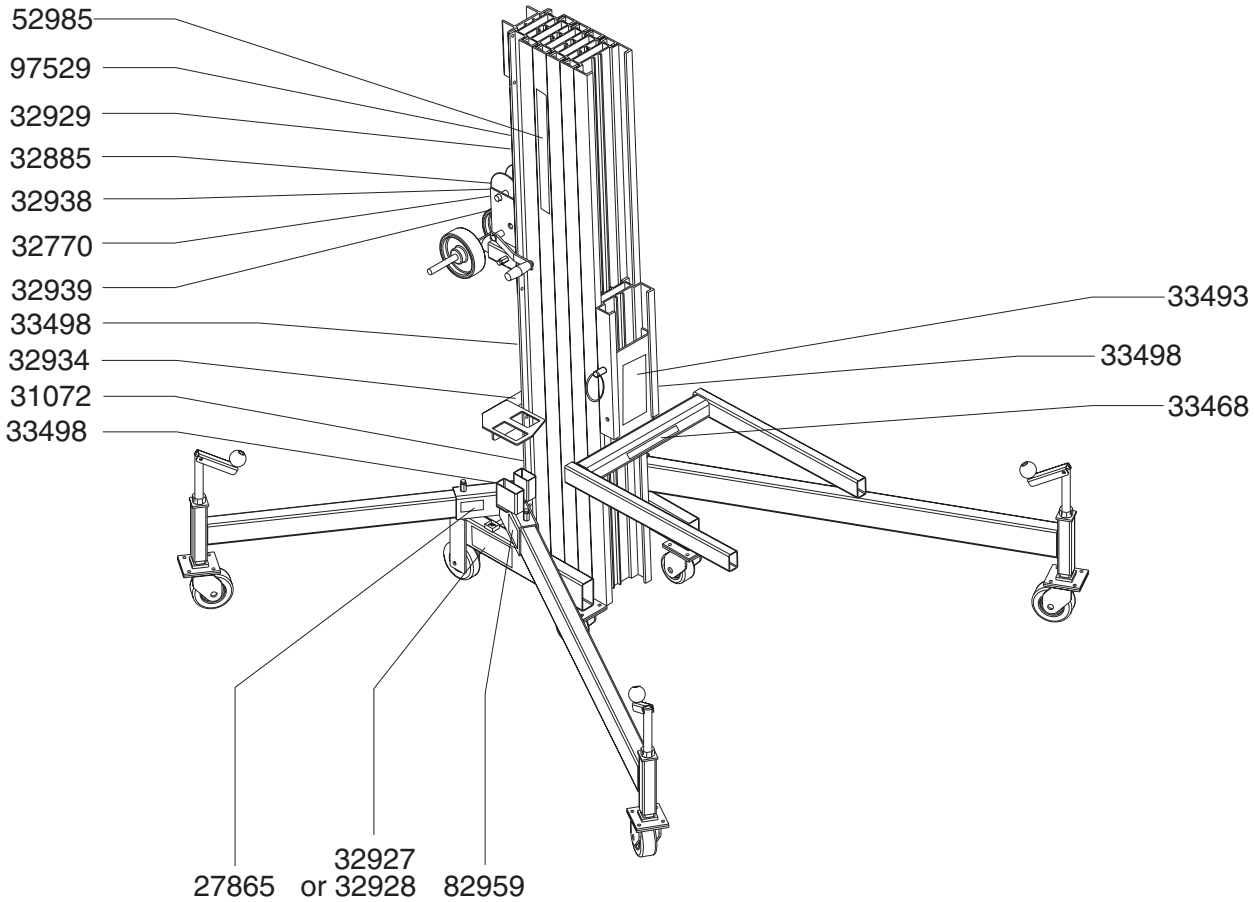
REV B FIGURE 6-A

Item	Part No.	Description	Qty.
1	31072	Label - Operator's Manual Storage Container	1
2	32934	Label - Outrigger Storage Socket	1
3	33498	Serial Plate	1
4	32939	Warning - Brake Lock	1
5	32770	Notice, Two-speed Shift Instructions	1
6	32938	Label - Use This Winch	1
7	32885	Warning - Silent Winch	1
8	32929	Warning - Machine Safety and Setup	1
9	32926	Genie Super Tower Logo	2
10	32931	Warning - Adjustable Fork Safety and Setup	1
11	6724	Serial Plate	1
12	33468	Warning - No Riders	1
13	27865	Label - Bubble Level	1
14	32927	Cosmetic, ST-20	2
—	32928	Cosmetic, ST-25	

Figure 6-B

REV C

Decals with Words (after serial number 7794-100)



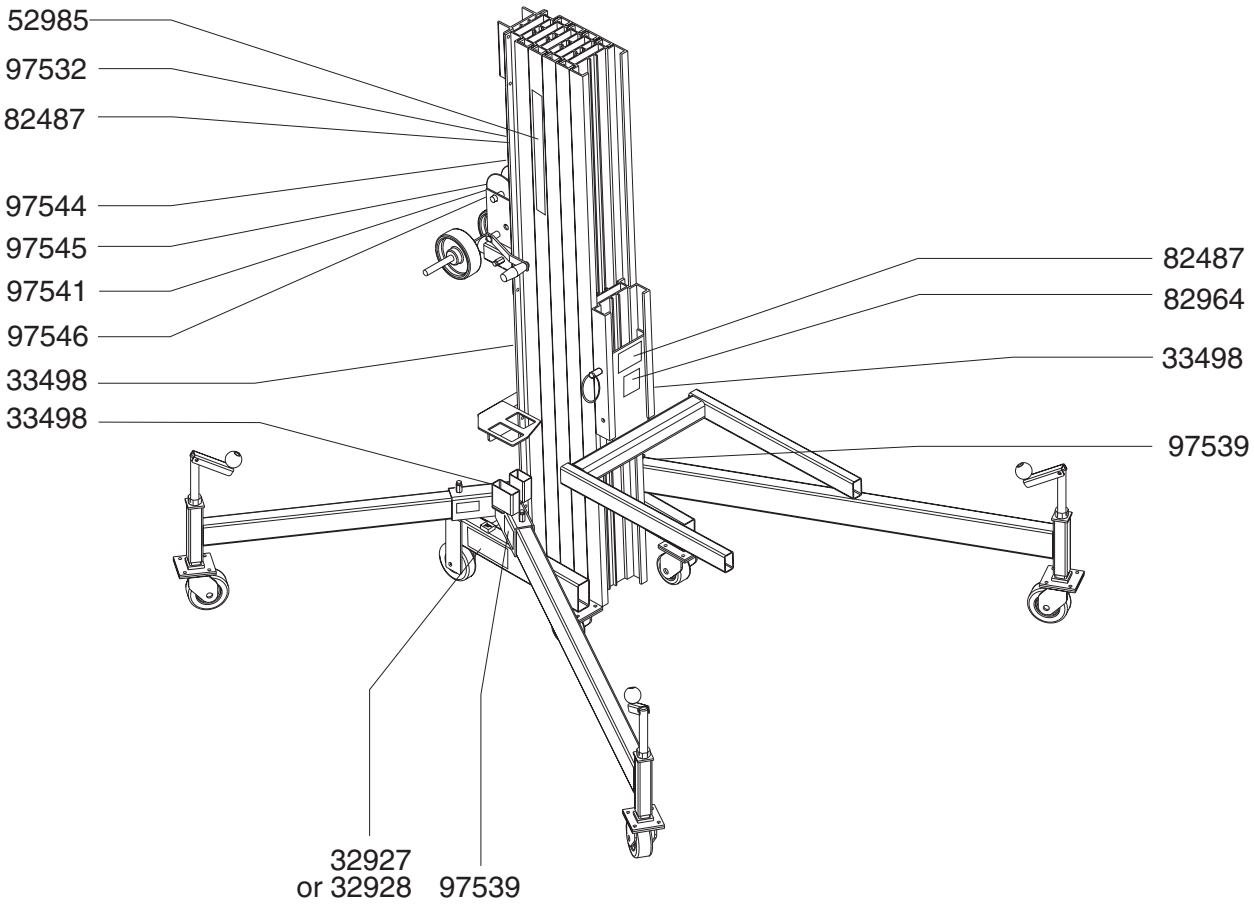
REV C FIGURE 6-B

Item	Part No.	Description	Qty.
1	27865	Label - Bubble Level	1
2	31072	Label - Operators Manual	1
3	32770	Notice, Two-speed Shift Instructions	1
4	32885	Warning - Silent Winch	1
5	32927	Cosmetic, ST-20	2
6	32928	Cosmetic, ST-25	2
7	32929	Warning - Machine Safety and Setup	1
8	32938	Label - Use This Winch	1
9	32939	Warning - Brake Lock	1
10	33493	Warning - Adjustable Forks Safety/Setup	1
11	33468	Warning - No Riders	1
12	33498	Label - Serial Plate	2
13	32934	Label - Outrigger Storage Socket	1
14	52985	Cosmetic - Genie Super Tower	2
15	82959	Danger - Electrocution Hazard	2
16	97529	Caution - Bodily Injury Hazard	1

Figure 6-C

REV B

Decals with Symbols



REV B FIGURE 6-C

Item	Part No.	Description	Qty.
1	32927	Cosmetic, ST-20	2
2	32928	Cosmetic, ST-25	2
3	33498	Label - Serial Plate	3
4	52985	Cosmetic - Genie Super Tower	2
5	82487	Label - Read the Manual	2
6	82964	Warning - No Riders	1
7	97532	Caution - Bodily Injury Hazard	1
8	97539	Danger - Electrocution Hazard	2
9	97541	Label - Use This Winch	1
10	97544	Warning - Load Center Chart	1
11	97545	Warning - Lock Brake	1
12	97546	Label - Two-speed Shift	1

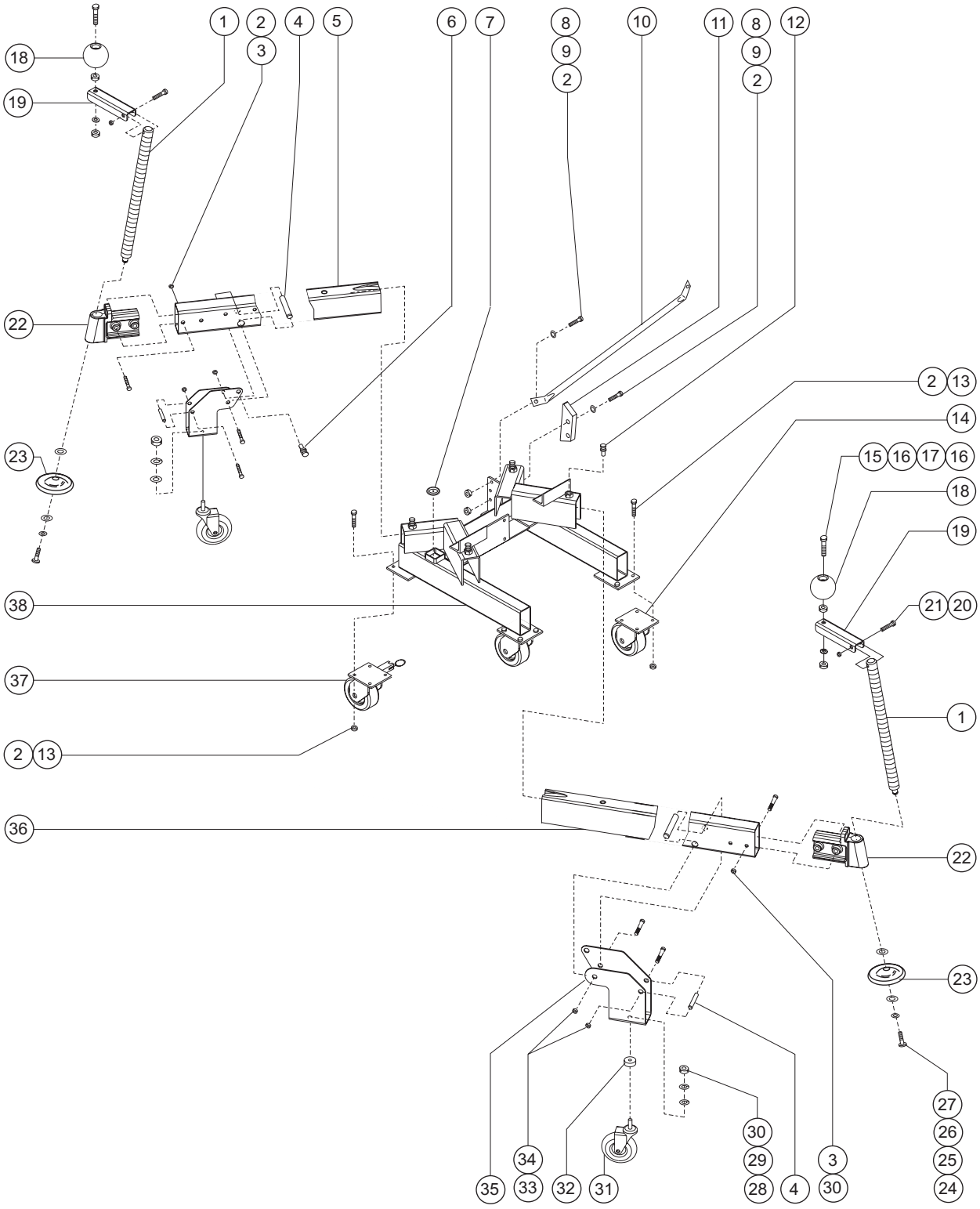
Notes

Base Components

Figure 7-A

REV C

Base Components



REV C FIGURE 7-A

Item	Part No.	Description	Qty.
—	33666	Leveling Jack Assembly (includes items 1 and 15 -27)	
1	23491	Leveling Jack Rod, 19.25 inches	4
2	4828	Nylock Nut, 3/8 -16	
3	8178	Screw - HHC, 3/8 -16 x 2.5 inches, GR 5	
4	32576	Pivot Tube	8
5	32971	Rear Outrigger Assembly (complete)	2
—	33152-S	Rear Outrigger Tube	
6	6825	Lock Pin Assembly	4
7	6714	Bubble Level	1
8	8516	Screw - HHC, 3/8 -16 x 1.5 inches, GR 5	
9	6097	Flat Washer, 3/8 inch	
10	33307	Left Side Mast Brace	1
—	33306	Right Side Mast Brace	
11	33670	Skid Pad, Loading	2
12	32375	Lock Pin Assembly	4
—	35830	Snap Pin Kit	
13	6019	Screw - HHC, 3/8 -16 x 1.25 inches, GR 5	
14	32480	Swivel Plate Caster, 4 x 1.5 inches	2
15	6708	Screw - HHC, 3/8 -16 x 2.25 inches, GR 5	
16	6022	Hex Nut, 3/8 -16	
17	6021	Lock Washer, 3/8 inch	
18	6082	Ball Knob Handle	4
19	8214	Leveling Jack Handle	4
20	6145	Screw - HHC, 1/4 -20 x 1.5 inches, GR 5	
21	6889	Low Profile Nylock Nut, 1/4 -20	
22	33673	Leveling Jack Casting	4
23	14538	Leveling Jack Foot Pad	4
24	10107	Screw - HHC, 5/16 -18 x 0.75 inch, GR 5	
25	6886	Lock Washer, 5/16 inch	
26	5397	Flat Washer, 5/16 inch	
27	22261	Flat Washer, 5/8 inch	
28	6034	Jam Nut, 1/2-13	
29	6033	Lock Washer, 1/2 inch	
30	6095	Flat Washer, 1/2 inch	
31	33651	Stem Caster, 5 x 1 1/2 inches	4
32	33781	Caster Spacer	2
33	6198	Nylock Nut, 1/2 -13	
34	10598	Screw - HHC, 1/2 -13 x 3 inches, GR 5	
35	33652P	Caster Mount Bracket	4
36	32972	Front Outrigger Assembly	2
—	33151	Front Outrigger Tube	
37	55737	Caster - Swivel Lock, 4 x 2 inches	2
38	32973	Base Assembly (includes item 7) (all models) (before serial number 7794-100)	1
—	107176	Base Assembly with Word Decals (includes item 7) (ST-20) (USA, Canada and Australia models) (after serial number 7794-101)	
—	107177	Base Assembly with Symbol Decals (includes item 7) (ST-20) (Asia, South America and Europe models) (after serial number 7794-101)	
—	107178	Base Assembly with Word Decals (includes item 7) (ST-25) (USA, Canada and Australia models) (after serial number 7794-101)	
—	107179	Base Assembly with Symbol Decals (includes item 7) (ST-25) (Asia, South America and Europe models) (after serial number 7794-101)	

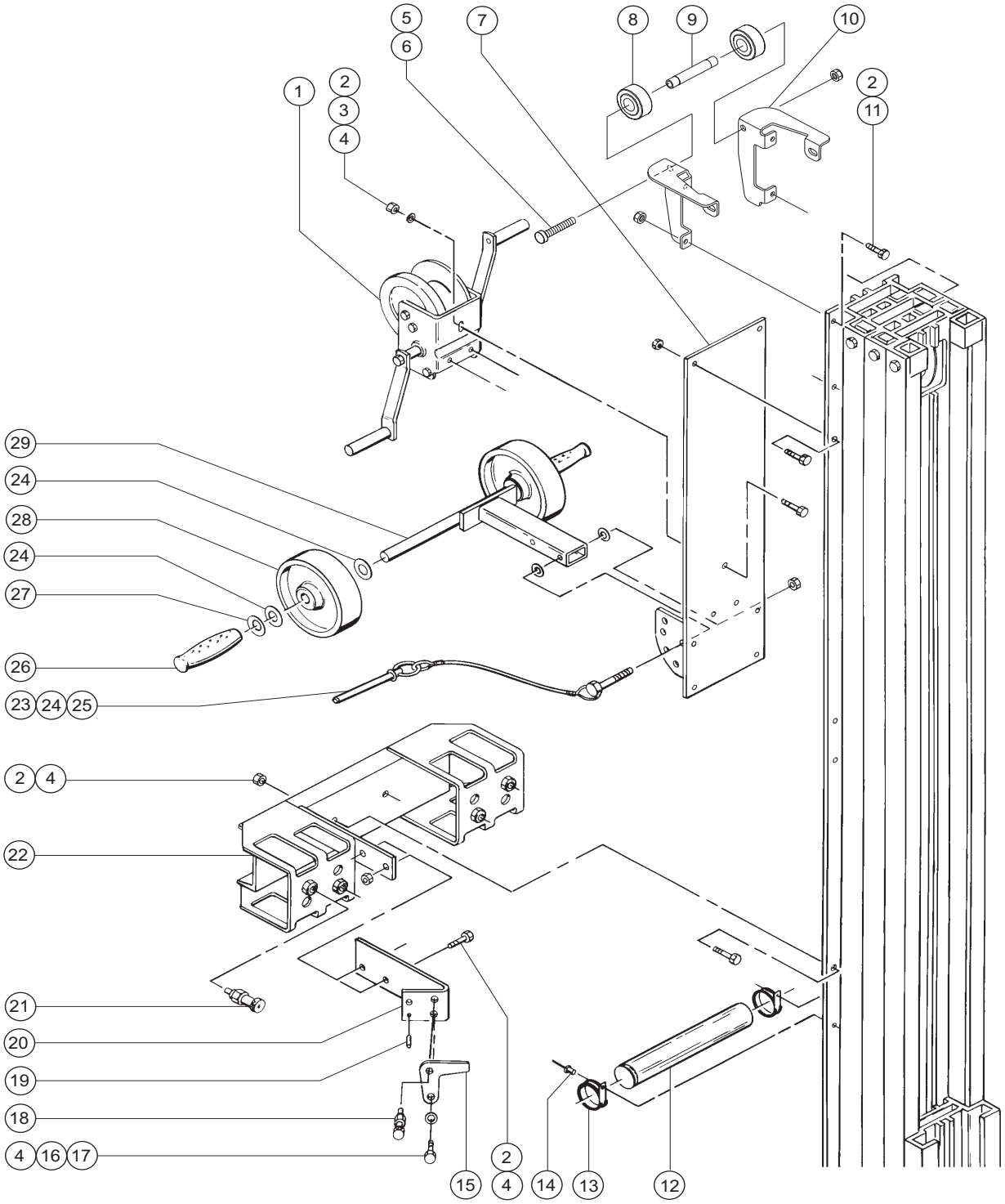
Notes

Mast and Winch Components

Figure 8-A

REV C

Number 1 Mast Attached Parts



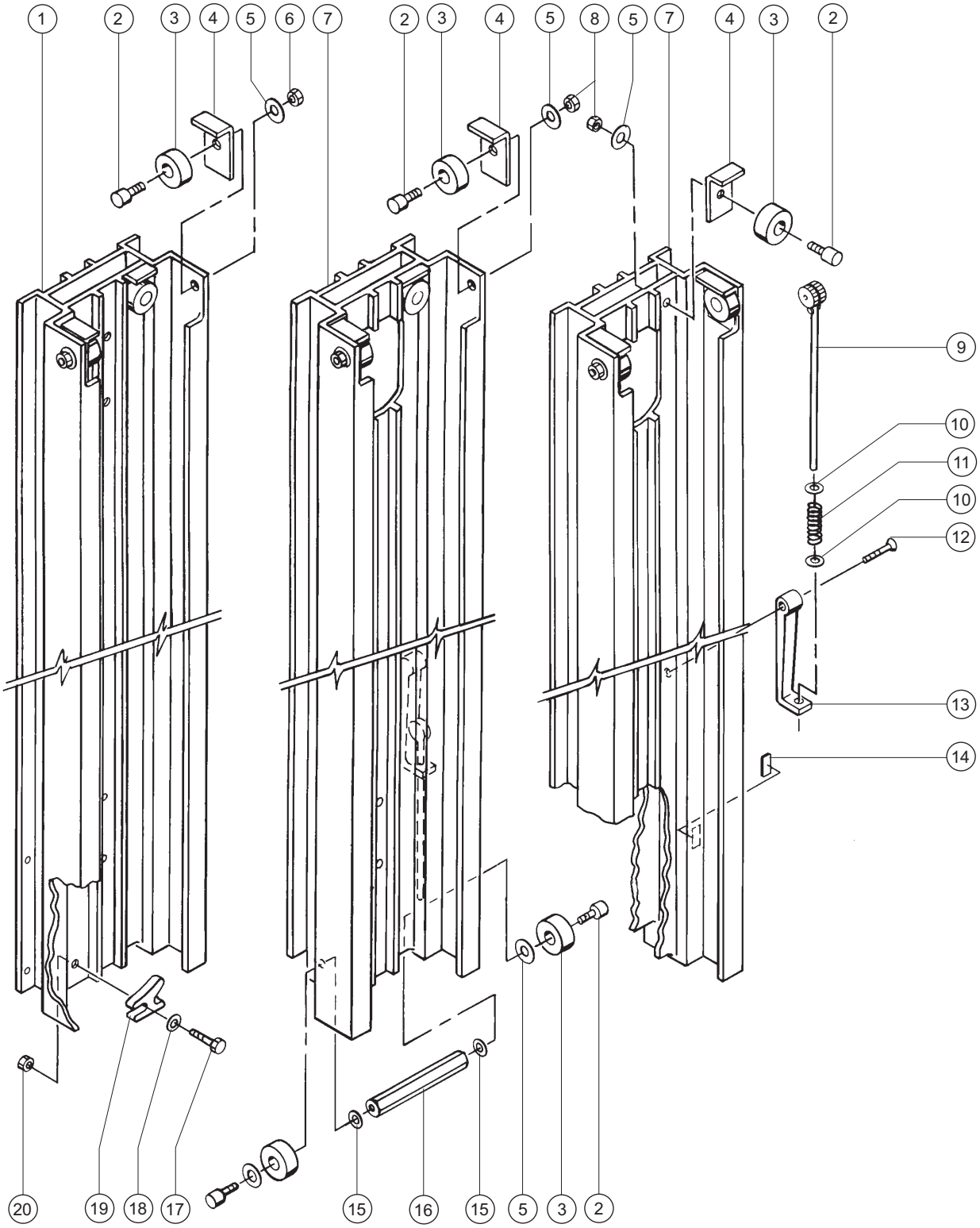
REV C FIGURE 8-A

Item	Part No.	Description	Qty.
1	Ref.	Winch Assembly (refer to 8-E or 8-F)	
2	4828	Nylock Nut, 3/8 -16	
3	6638	Flat Washer, 1/4 inch	
4	6175	Screw - HHC, 3/8 -16 x 1 inch, GR 5	
5	6198	Nylock Nut, 1/2 -13	
6	13005	Screw - HHC, 1/2 -13 x 6 inches, GR 8	1
7	33539	Winch Mount Plate with Word Decals (all models before serial number 7794-100) (USA, Canada and Australia models) (after serial number 7794-101)	
—	107493	Winch Mount Plate with Symbol Decals (Asia, South America and Europe models) (after serial number 7794-101)	
8	32473	Nylatron Roller, 1.75 x 0.72 inch	2
9	33843	Mast Stiffener Spacer, 4.56 x 0.75 inch	1
10	109579	Mast Stiffener, Right, Gray	1
—	109580	Mast Stiffener, Left, Gray	
11	6019	Screw - HHC, 3/8 -16 x 1.25 inches, GR 5	
12	6600	Manual Storage Container	1
—	31822	Cap	
13	6653	Rubber Cushioned Clamp, 1.88 inches	2
14	7265	Steel Rivet, 0.375 x 0.25 inch	2
15	33653P	Carriage Hold-down Latch	1
16	33720	Flange Bearing, 3/8	1
17	7713	Low Profile Nylock Nut, 3/8 -16	
18	33674	Lock Pin Assembly	1
19	32483	Roll Pin, 0.25 x 0.5 inch	1
20	33663P	Carriage Hold Down Latch Bracket	1
21	32375	Lock Pin Assembly	1
—	35830	Snap Pin Kit	
22	33191	Outrigger Storage Socket	1
23	100309	Pin Assembly, with Lanyard	1
—	80679	Detent Pin, 0.5 x 2.7 inches	
—	2163	Cable, 1/16 inch	
—	2238	Cable Oval Sleeve, 1/16 inch	
—	10598	Screw - HHC, 1/2 -13 x 3 inches	
—	40658	Flat Washer, .51 inch	
24	6564	Shim Washer, 0.781 x 1.312 x 0.093 inch	6
25	6086	Low Profile Nylock Nut, 1/2 -13	
26	6587	Grip Handle	2
27	33385	Shaft Washer, 0.75 inch	2
28	57788	Wheel - 6 x 0.75 x 2 inches	2
29	33540	Loading Wheel Assembly (includes items 24 and 26-28)	1
—	33618	Loading Wheel	

Figure 8-B

REV D

Mast Components, View 1



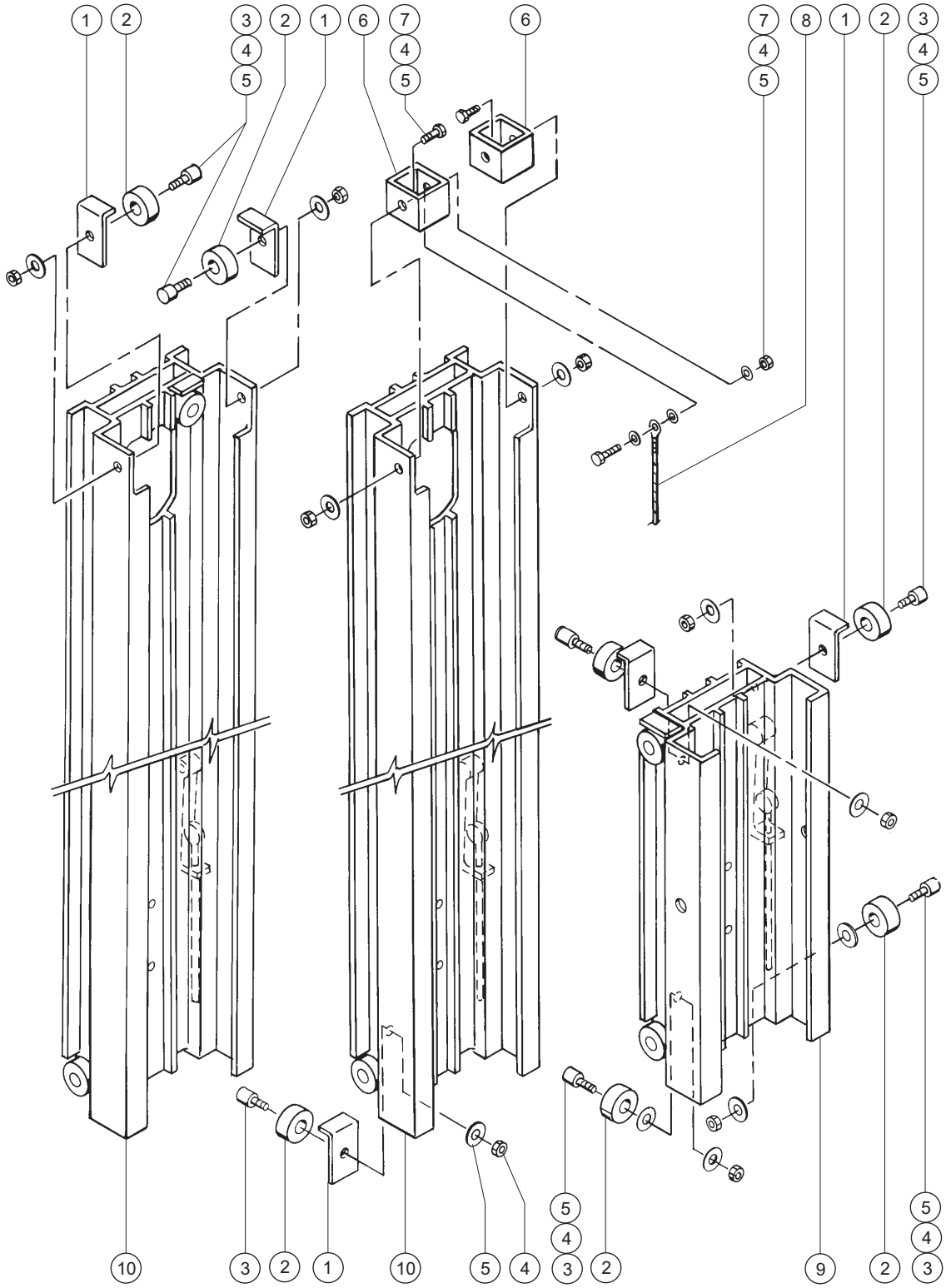
REV D FIGURE 8-B

Item	Part No.	Description	Qty.
1	35105	Column Number 1 (all models) (from serial number 7794-00001 to 7794-00336)	1
—	33308	Column Number 1 (all models) (from serial number 7794-00337 to 7799-00001)	
—	57036-S	Column Number 1 (all models) (after serial number 7799-00001)	
2	32475	Roller Bolt	15
3	32473	Roller	15
4	33701	Roller Guard	11
5	6095	Flat Washer, 1/2 inch	
6	6086	Low Profile Nylock Nut, 1/2 -13	
7	32965	Column Assembly, Numbers 2 - 5 (all models) (from serial number 7794-00001 to 7794-00358)	2
—	35480	Column Assembly, Numbers 2 - 5 (all models) (from serial number 7794-00359 to 7799-00001)	
—	57037-S	Column Assembly, Numbers 2-5 (all models) (after serial number 7799-00001)	
8	6198	Nylock Nut, 1/2 -13	
9	35100	Safety Brake Stop Assembly (before serial number 7795-00358)	2
—	35101	Safety Brake Stop Assembly (after serial number 7795-00357)	
10	21442	Flat Washer, 0.75 x 0.45 x 0.032 inch	4
11	32481	Safety Brake Spring	2
12	17712	Screw - FHS, 3/8 -16 x 1.75 inches	
13	35100	Safety Brake Ramp (before serial number 7795-00359)	2
—	35101	Safety Brake Ramp (after serial number 7795-00358)	
14	33541	Shim - 0.75 x 0.10 inch	3
15	6052	Shim Washer, 0.5 x 0.875 x 0.063 inch	2
16	33080	Coupler Bar (ST-20 and ST-25)	1
17	6019	Screw - HHC, 3/8 -16 x 1.25 inches, GR 5	
18	12013	Shim Washer, 0.375 x 0.063 inch	
19	32522	Down Stop	3
20	4828	Nylock Nut, 3/8 -16	

Figure 8-C

REV C

Mast Components, View 2



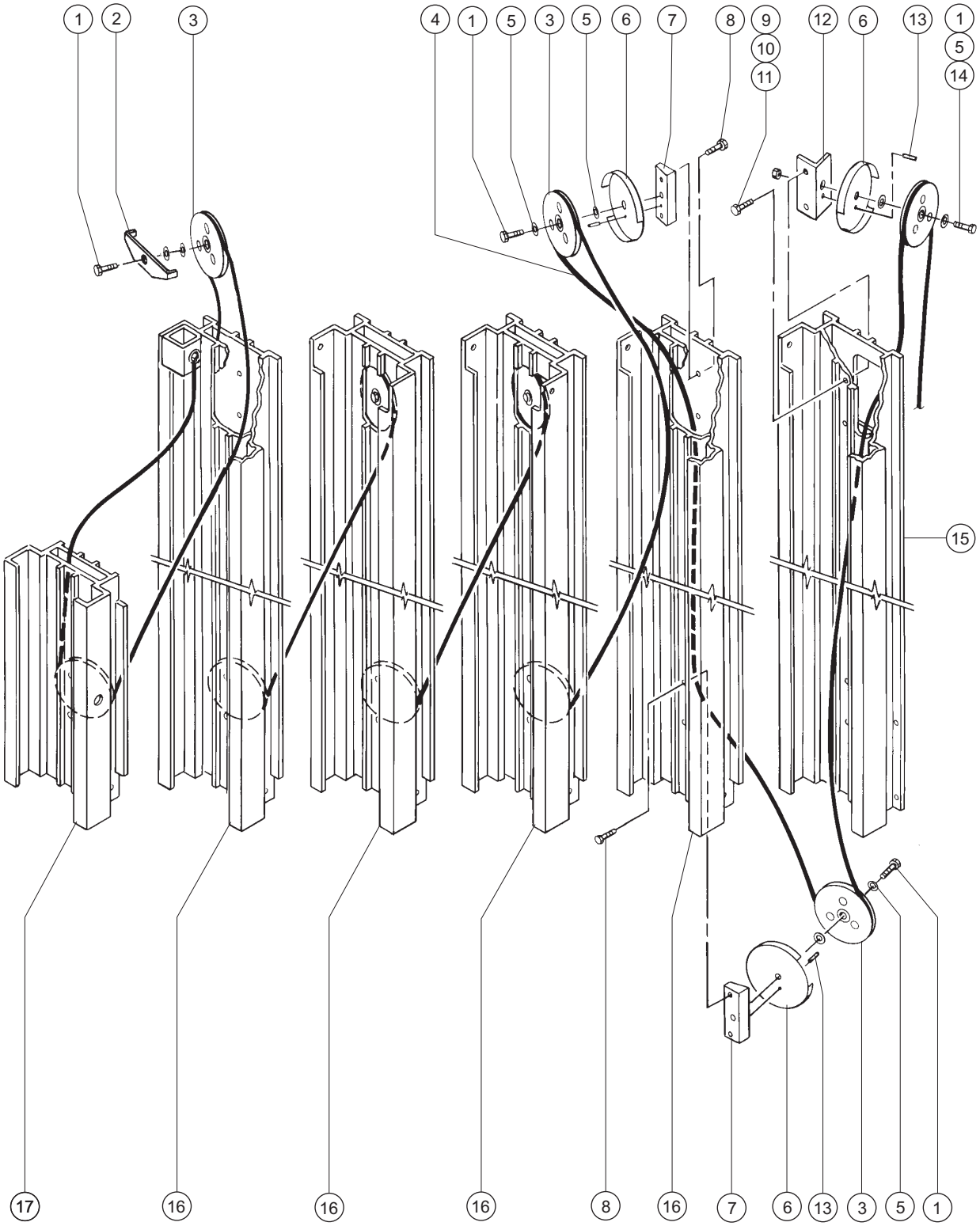
REV C FIGURE 8-C

Item	Part No.	Description	Qty.
1	32474	Roller Guard	8
2	32473	Roller Wheel	15
3	32475	Roller Bolt	15
4	6095	Flat Washer, 1/2 inch	
5	6198	Nylock Nut, 1/2 -13	
6	33704	Cable Anchor	2
7	10587	Screw - HHC, 1/2 -13 x 1.75 inches, GR 5	
8	32904	Cable Assembly (ST-20)	
—	32905	Cable Assembly (ST-25)	
—	12402	Cable Replacement Coupler	
9	32966	Carriage Assembly (ST-20 and ST-25) (from serial number 7794-00001 to 7794-00358)	1
—	35484	Carriage Assembly (ST-20 and ST-25) (from serial number 7794-00357 to 7799-00001)	
—	57035	Carriage Assembly (ST-20 and ST-25) (after serial number 7799-00000)	
10	32965	Column Assembly, Numbers 2 - 5 (all models) (from serial number 7794-00001 to 7794-00358)	2
—	35480	Column Assembly, Numbers 2 - 5 (all models) (from serial number 7794-00357 to 7799-00001)	
—	57036	Column Assembly, Numbers 2-5 (all models) (after serial number 7799-00000)	

Figure 8-D

REV C

Mast Components, Pulleys and Cables



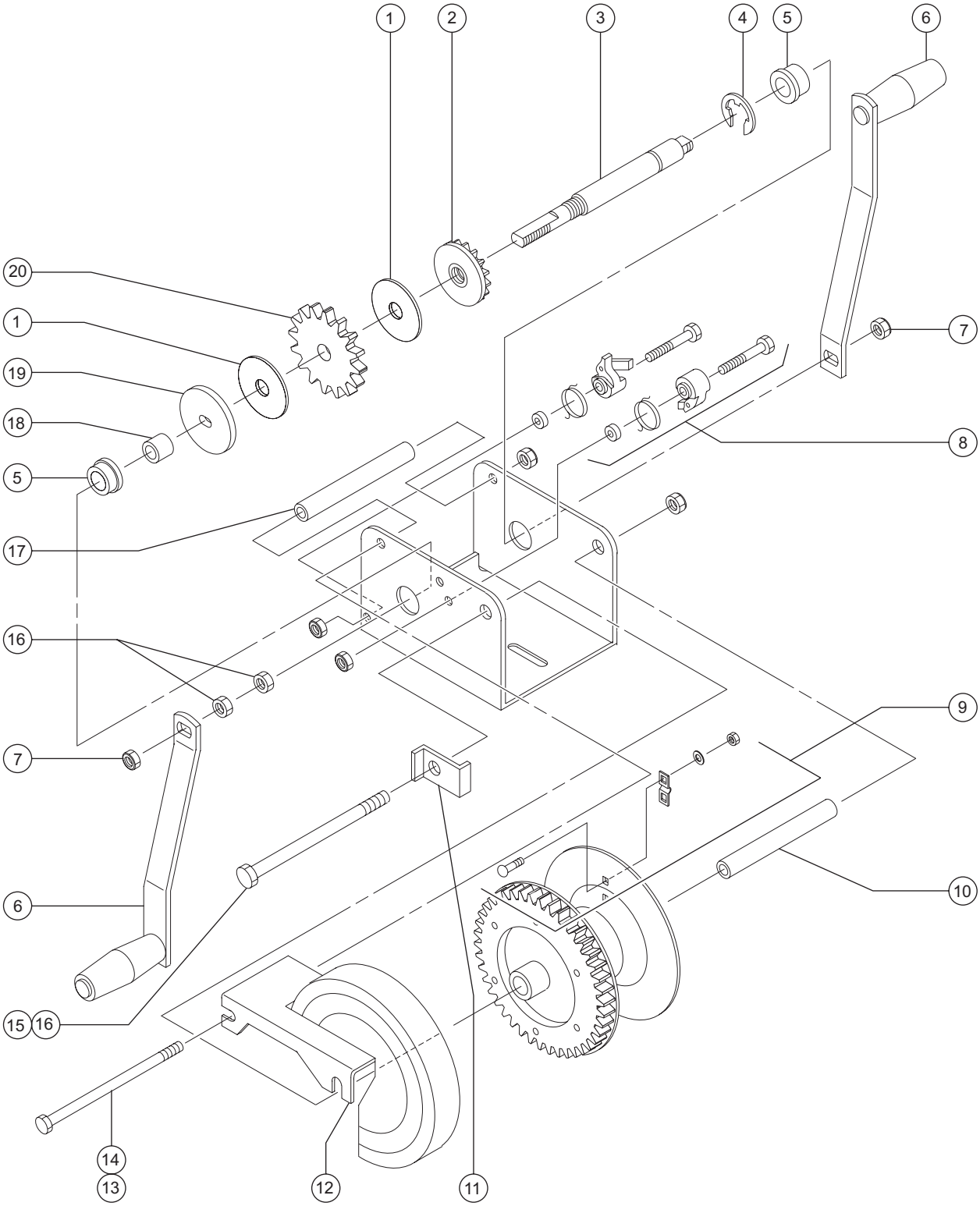
REV C FIGURE 8-D

Item	Part No.	Description	Qty.
1	10597	Screw - HHC, 1/2 -13 x 1.25 inches, GR 5	
2	33420	Outer Cable Guard	1
3	49999	Pulley with Bearing	10
4	32904	Cable Assembly (ST-20) (refer to 8-C)	
—	32905	Cable Assembly (ST-25)	
—	12402	Cable Replacement Coupler	
5	6052	Shim Washer, 0.5 x 0.875 x 0.063 inch	20
6	32476	Pulley Guard	10
7	32470	Pulley Mount	9
8	8255	Screw - HHC, 3/8 -16 x 0.75 inch, GR 5	
9	6019	Screw - HHC, 3/8 -16 x 1.25 inches, GR 5	
10	6097	Flat Washer, 3/8 inch	
11	4828	Nylock Nut, 3/8 -16	
12	33700	Pulley Mount, Number 1 Mast	1
13	32483	Roll Pin, 0.25 x 0.5 inch	10
14	6086	Low Profile Nylock Nut, 1/2 -13	
15	35105	Column Number 1 (all models) (from serial number 7794-00001 to 7794-00337)	1
—	33308	Column Number 1 (all models) (from serial number 7794-00336 to 7799-00001)	
—	57036	Column Number 1 (all models) (after serial number 7799-00000)	
16	32965	Column Assembly, Numbers 2 - 5 (all models) (from serial number 7794-00001 to 7794-00358)	2
—	35480	Column Assembly, Numbers 2 - 5 (all models) (from serial number 7794-00357 to 7799-00001)	
—	57036	Column Assembly, Numbers 2-5 (all models) (after serial number 7799-00000)	2
17	32966	Carriage Assembly (ST-20 and ST-25) (from serial number 7794-00001 to 7794-00358)	1
—	35484	Carriage Assembly (ST-20 and ST-25) (from serial number 7794-00357 to 7799-00001)	
—	57035	Carriage Assembly (ST-20 and ST-25) (after serial number 7799-00000)	

Figure 8-E

REV C

Winch Components, One-speed



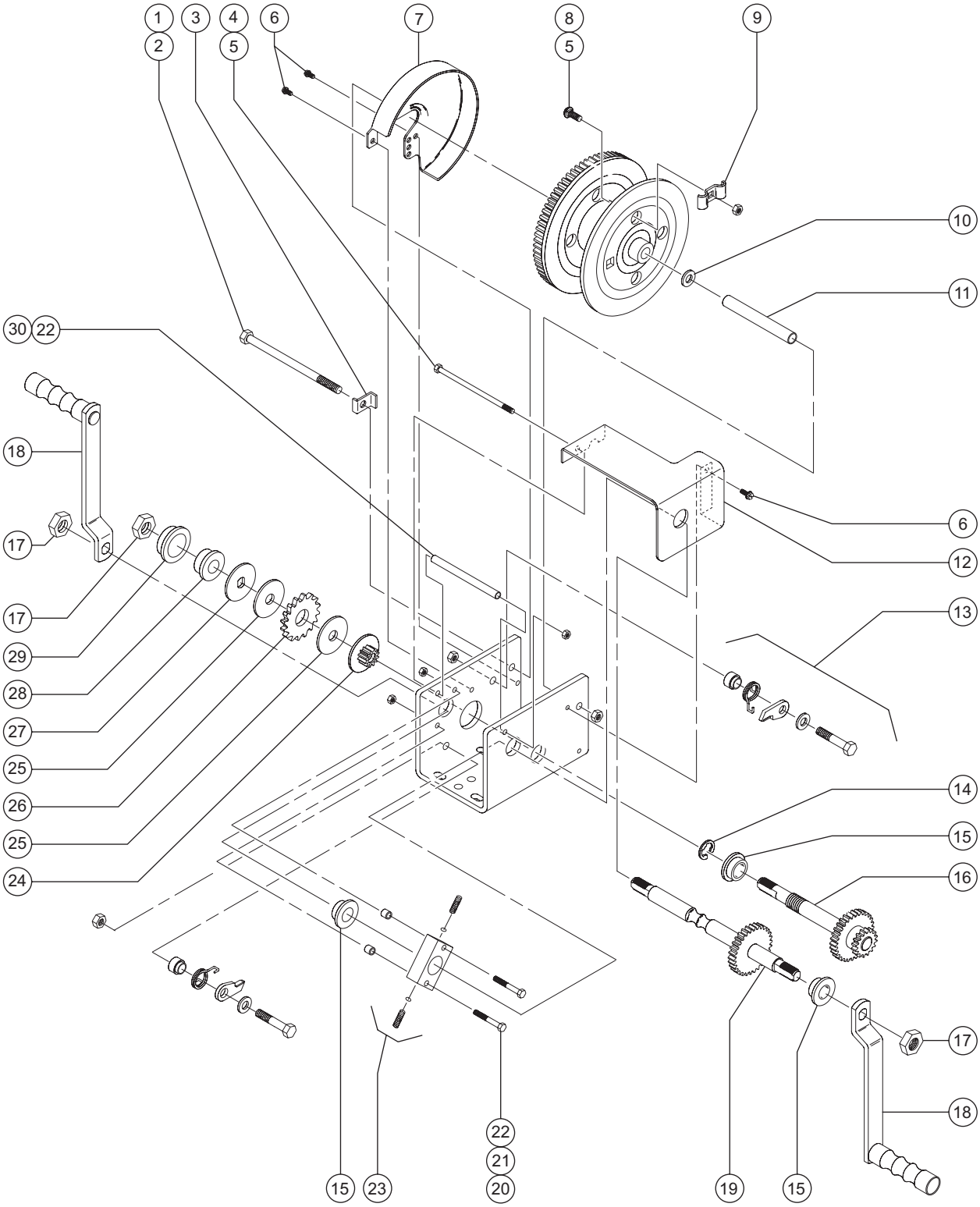
REV C FIGURE 8-E

Item	Part No.	Description	Qty.
—	32945	Winch Assembly, One-speed with Word Decals (all models) (before serial number 7794-101) (USA, Canada and Australia models) (after serial number 7794-100)	
—	107494	Winch Assembly, One-speed with Symbol Decals, One-speed, (Asia, South America and Europe models) (after serial number 7794-100)	
1	7571	Disc Brake	2
2	7590	Pinion Gear	1
3	32891	Pinion Shaft	1
4	6200	Retaining Ring, 0.75 inch	1
5	6199	Pinion Shaft Bushing	2
6	33144	Winch Handle, 8 inches (Perpendicular slot)	2
—	16343	Winch Handle, 8 inches (Parallel slot)	
7	6086	Low Profile Nylock Nut, 1/2 -13	
8	40458	Ratchet Pawl Kit	1
—	8516	Screw - HHC, 3/8 -16 x 1.5 inches, GR 5	
—	35734	Sequencing Cable Bracket	
—	4500	Cable, 1/8, 7 x 19	
—	4517	Stop Sleeve, Cable Tension	
—	4518	Cable Swage, Mast Tension	
—	4828	Nylock Nut, 3/8 -16	
9	6190	Cable Keeper Kit	1
—	80159	Carriage Bolt, 10-24 x 0.63 inch, GR 2	
—	80160	Cable Keeper	
—	80161	Internal Star Washer, 5/8 inch	
—	25625	Hex Nut, 10-24	
10	6184	Drum Spacer	1
11	31946	Drum Lock Bolt	1
12	6770	Winch Gear Cover	1
13	7256	Screw - HHC, 5/16 -18 x 6 inches, GR 2	
14	6782	Lock Nut, 5/16 -18	
15	6185	Drum Bolt	1
16	6034	Jam Nut, 1/2 -13, GR 2	
17	7584	Frame Spacer	1
18	32890	Pinion Shaft Spacer	1
19	7591	Pinion Plate	1
20	6777	Ratchet Gear	1

Figure 8-F

REV C

Winch Components, Two-speed



REV C

FIGURE 8-F

Item	Part No.	Description	Qty.
—	32946	Winch Assembly, Two-speed with Word Decals (all models) (before serial number 7794-101) (USA, Canada and Australia models) (after serial number 7794-100)	
—	107495	Winch Assembly, Two-speed with Symbol Decals (Asia, South America and Europe models) (after serial number 7794-100)	
—	40130	Cable Keeper Kit (includes items 5, 8 and 9)	
1	78037	Screw - HHC, 3/8 -16 x 5.5 inches	
2	4828	Nylock Nut, 3/8 -16	
3	80145	Reel Lock Bolt	1
4	80146	Screw - HHC, 1/4 -20 x 5.25 inches	
5	6091	Nylock Nut, 1/4 -20	
6	80147	Threaded Screw - FHC, 1/2 inch	
7	80148	Reel Cover	1
8	80149	Carriage Bolt, 1/4 -20 x 0.5 inch, GR 2	
9	37065	Cable Keeper	1
10	80150	Flat Washer, 1/2 inch	
11	40113	Reel Spacer	1
12	80151	Gear Cover	1
13	40117	Ratchet Pawl Kit	1
—	8516	Screw - HHC, 3/8 -16 x 1.5 inches, GR 5	
—	5397	Flat Washer, 5/16 inch	
—	80154	Ratchet Pawl	
—	80153	Ratchet Spring	
—	80152	Ratchet Spacer	
—	4828	Nylock Nut, 3/8 -16	
14	40116	Retaining Ring, 0.75 inch	1
15	40126	Sintered Iron Bearing, 0.75 inch	
16	80155	Pinion Shaft Assembly	1
17	38028	Low Profile Nylock Nut, 5/8 -11	
18	40125	Handle, 8 inches	2
19	72264	Input Shaft Assembly	1
20	6145	Screw - HHC, 1/4 -20 x 1.5 inches, GR 5	
21	40115	Brake Spring Spacer	2
22	6889	Low Profile Nylock Nut, 1/4 -20	
23	40127	Detent Block Assembly	1
—	40509	Detent Spring	2
—	40510	Detent Ball	2
—	80156	Detent Block	1
24	80157	Pinion Gear	1
25	37061	Disc Brake	2
26	37062	Ratchet Gear	1
27	40122	Pinion Plate	1
28	40123	Brake Spacer	1
29	37064	Pinion Shaft Bushing	1
30	40128	Base Spacer	1

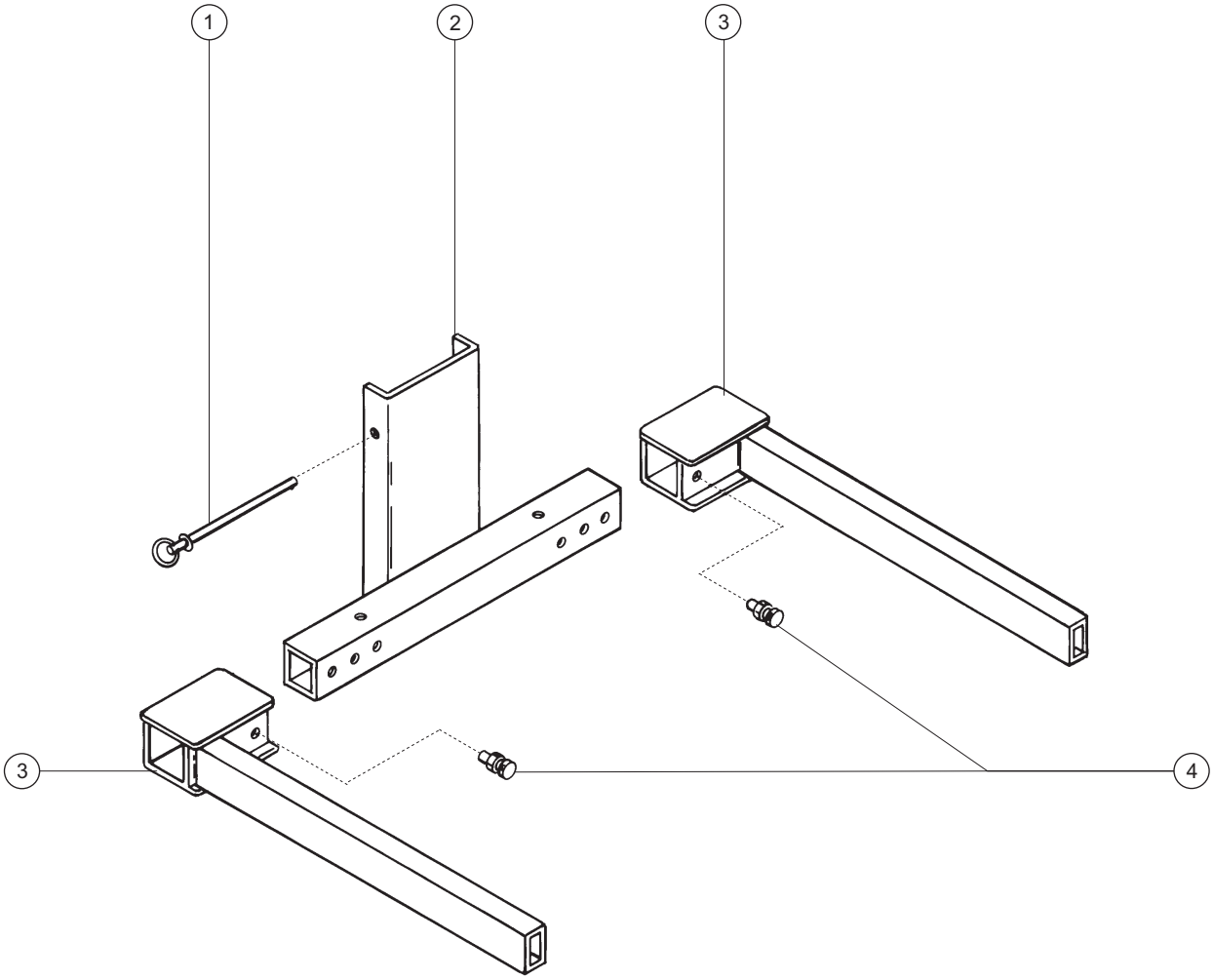
Notes

Accessories

Figure 9-A

REV B

Adjustable Forks



REV B FIGURE 9-A

Item	Part No.	Description	Qty.
—	33543	Adjustable Fork Option, Complete	
1	80679	Detent Pin	1
2	33542	Adjustable Fork Carrier with Word Decals (all models) (before serial number 7794-101) (USA, Canada and Australia models) (after serial number 7794-100)	1
—	107221	Adjustable Fork Carrier with Symbol Decals (Asia, South America and Europe models) (after serial number 7794-100)	
3	33707-S	Adjustable Fork	2
4	32375	Fork Lock Pin	2

Notes

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Parts and Service Manual Super Tower

(from serial number 7794-101 to 7799-101)

Part No. 32951